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(THOSE WITHOUT NUMBER OF PAGE DO NOT APPEAR IN THIS ISSUE.)

NEW PATENTS.

LIST of APPLICATIONS for New Patents relating to Mining Metallurgical, Engineering, Railway and kindred matters, specially compiled from official sources for the "Mining Journal" by Messrs Rayner and Company, Patent Agents, 37, Chancery Lane, London, W.C., who will forward all information regarding them free on application.

16743 Charles Albert Knight and George William Thode, 67, St. Vincent Street Glasgow.—Improvements in steam generators.—September 3

16750 George Richmond, 8, Quality Court, London.—Improvements in water tube boilers and setting therefore.—September 3.

16756 Frederick William Golby, 36 Chancery Lane, London.—Improvements in furnaces.—September 3.

16758 William Roberts, 7, Staple Inn, London.—Improvements in utilising the bosh cinder produced in the puddling of iron, and in puddling and mill furnaces to be employed in utilising the said bosh cinder.—September 3.

16804 Charles Harrison and John Hudspith Pearson, Paston, near Peterboro'.—A sliding cylinder.—September 4.

16823 George Thornley and Peter Thornley, 47, Lincoln's Inn Fields, London.—Improvements in or connected with gear for operating cut off or expansion valves of engines worked by steam or other expansible fluid.—September 4.

16834 Philetus Warren Gates and Charles Lewis Carman, 45, Southampton Buildings, Chancery Lane, London.—Improvements in stone crushers.—September 4.

16839 Henry Griffith Keasby, 45, Southampton Buildings, London.—Improvements in steam boilers.—September 4.

16853 William Phillips Thompson, 6, Lord Street, Liverpool.—Improvements in apparatus for breaking or crushing stone, ore, and other hard substances.—September 4.

16910 Robert Gosling, Benjamin Hooker, Henry Hooker, and Fred Hooker, Pear Tree Court, Farringdon Road, London.—An improved device for equalising the force draught for destructor or other furnaces.—September 5.

16944 William Green and Henry Green, 22, Glasshouse Street, Regent Street, London.—Improvements in miners' and other safety lamps.—September 5.

16945 George Bently, 2, Mort Street, Oldham.—Improvements in lubricators for steam engine pistons and other moving surfaces.—September 6.

16951 Thomas Davies and Samuel Davies, 4, Clayton Square, Liverpool.—Improvements in pistons.—September 6.

16952 Thomas Davies and Samuel Davies, 4, Clayton Square, Liverpool.—Improvements in the manufacture of furnace fire bars.—September 6.

16971 Alfred Jobson, 57, Chancery Lane, London.—Improvements in means for facilitating the loading of railway trucks with coke from coke oven quays or platforms.—September 6.

16978 Charles Naylor, 8, Quality Court, Chancery Lane, London.—Improvements in the method and apparatus for heating boiler and other furnaces, kilns and the like.—September 6.

16990 Dennis Mellor and Melton Mellor, 36, Chancery Lane, London.—Improvements in furnaces and furnace bars.—September 6.

SPECIFICATIONS PUBLISHED.

16,577, Chaplet, electric furnaces, 1893; 15,703, Robinson, steam engines, 1893; 19,249, Makin, steam generators, 1893; 11,593, Haddan, pistons, 1893; 12041, separating oil and water from steam, 1894; 13,586, Grouvelle and Arguembourg, steam superheaters, 1894; 13,774, Wallis, valve gear for steam engines, 1894.

The above specifications published may be had of Messrs. Rayner and Company, 37, Chancery Lane, London, at 10d. each including postage.

CONTRACTS OPEN:

FOR MINE, QUARRY, RAILWAY, AND ENGINEERING WORK, STORES, &c.

**** We shall be obliged by being promptly placed in possession of particulars regarding contracts open for competition, and of the results of successful tenders. In the latter case contract prices should be given.*

The date given is that by which tenders must be delivered, in nearly all cases further information can be obtained on application at the addresses given. In applying for such the name of "The Mining Journal" should be mentioned as the original source of the information, concerning which further particulars are required.

HOME CONTRACTS.

Coal, September 24 (*London*).—Tenders [illegible] of Coke, required for the Cape Government Railways for the year 1895, will be received by the Agent-General for the Cape of Good Hope, 112, Victoria Street, S.W. Forms of tender and conditions can be obtained from the Agent-General's Office.

Pig Iron, September 24 (*London, E.C.*).—The East Indian Railway Company invite tenders, upon the company's general conditions of contract, for the supply, at Calcutta, of 500 tons No. 1 Scotch pig iron, to be despatched from this country, by direct A 1 steamer, within two weeks from the date of acceptance of tender, and to be delivered into craft to be supplied by the company within the limits of the port. The company's form of bill of lading is to be used. Tenders to be sent to Mr. A. P. Dunstan, secretary, Nicholas Lane, London, E.C.

Goods Wagons, September 26 (*London, E.C.*).—For the supply of 60 covered goods wagons, for the Bengal and North Western Railway Company (Limited), in accordance with the drawings, particulars of which may be obtained at the company's office. Specifications, forms of tender, and general conditions of contract may be obtained by payment of £1 1s. each, no part of which will in any case be returned. Tenders should be delivered by noon on 26th inst., endorsed "Tender for Covered Goods Wagons." Mr. E. L. Marryat, secretary, 237, Gresham House, Old Broad Street, London, E.C.

Underframes, September 26 (*London, E.C.*).—For the supply and delivery of steel underframes, &c., for carriages, and drawbar volute springs, &c., for the East Indian Railway Company, as per specifications and drawings to be seen at the Company's Offices. Tenders are to be sent to Mr. A. P. Dunstan, secretary, Nicholas Lane, London, E.C.

Sinking Well, September 27 (*Millfield, near Cork.*).—For sinking well and erecting pump at Millfield, near Cork, for the Guardians, according to specification, which can be seen at the office of Mr. J. Cotter, clerk. Sealed tenders to be lodged in the tender box, board room, by 12 noon on the 27th inst.

Reservoir, September 29 (*Morley Yorks.*).—For the construction of a service reservoir having a capacity of about ten million gallons at Bruntcliffe, Morley, for the Corporation. Plans, sections, and specifications may be inspected, and forms of tender and all other information and particulars obtained at the office of Mr. Charles Gott, M.I.C.E., 8, Charles Street, Bradford, on 17th inst, and following days. Tenders are to be sent to Mr. R. Borrough Hopkins, town clerk, by 29th inst.

Pipes, September 29 (*Ramsgate*).—For the supply of 300 cast iron socket and spigot pipes, 12 feet 4½ inches long and 12 inches in diameter; 200 cast iron socket and spigot pipes, 9 inches in diameter; together with sundry special castings for the committee. Tenders to be sent in by 29th inst., addressed to the Chairman of the Gas and Water Committee, and endorsed "Tender for Pipes."

Sinking Shafts (*Ilkeston*).—For sinking a 15 feet shaft. Apply for particulars to the Manager, West Hallam Colliery Company, Ilkeston.

Steam Boilers (*Wakefield*).—Tenders required by Messrs. McPhail and Simpsons, engineers, for the supply of seven steam boilers Lancashire type. Applications to Messrs. McPhail and Simpsons, Calder Works, Wakefield.

Railway (*London*).—For the construction of a short line of railway on the outskirts of London, including the supply of all materials. Lithographed plan and sections and specification will be supplied on written application to Mr. R. F. Anderson, A.M.I.C.E., Ryde, Isle of Wight, on payment of £1 10s., which will be returned to all except the successful contractor.

OUR INQUIRY COLUMN.

TO CORRESPONDENTS.

Correspondents will please take note that all communications will in future be answered in this column and not through the medium of the post. All questions and replies should be accompanied by the name and address of the writer.

REPLIES.

C. B.—We should not advise you to subscribe.

J. S. (Dublin).—We cannot recommend a purchase of these shares.

NEMO.—The prospect seems a little brighter now.

G. P.—Yes; as far as we know.

A. K. W.—We regard them as a fair speculation.

J. A.—You have omitted to send your name and address.

R. B.—We know nothing against them.

W. G.—We cannot say. The last dividend was paid in June.

MR. H. BUSH, M.E., is proceeding to-day (Saturday) by the *Dunottar Castle* to South Africa, as our representative out there. He will be commissioned to inspect all mines and to cable us weekly, and to report from time to time upon their position and prospects.

ELECTROLYSIS IN THE PRODUCTION OF NICKEL AND COBALT.—The future of the metal cobalt is still uncertain, but there is no doubt that nickel has now obtained an important place amongst the useful metals. Whilst 1,000 tons flooded the market a few years ago, about eight times this quantity is now consumed in a year, chiefly in the production of nickel-steel and nickel-copper. We do not imagine that either nickel or cobalt will ever be produced in very large quantities by wet methods of electrolysis; but since for some purposes, which are increasing in importance year by year, it is desirable to have these metals in their purest state, there is little doubt that the advantages offered by electrolytic processes will be recognised. Recently C. Hoepfner has devised a method of this kind, using solutions of the metals, these solutions being either neutral or slightly acidulated with citric or phosphoric acids. These solutions are placed next cathodes, which either rotate or oscillate, and are pounded with brushes or rubbing cushions, whilst next the anode, which may be soluble or insoluble, is placed a solution of some electro-positive metal, such as the chlorides of sodium, potassium, or calcium. An insoluble anode may be replaced in this process by a soluble one such as zinc, which is more electro-positive than cobalt or nickel. In the plant which has been designed for this process a remarkable feature is the use of membranes between the electrodes, made of "nitro-cellulose," "nitro-linen," and "nitro-cloth," which are sometimes mixed with asbestos, but are in every case backed on the cathode side by an open grating or sieve. Hoepfner proposes to obtain zinc, lead, tin, and copper by this process.—*Electrical Review.*

MINERAL RESOURCES OF THE UNITED STATES.

IRON ORES.

By JOHN BIRKINBINE.

COMPARISONS.—The calendar year 1893 shows a marked decline in the quantity of iron ore mined, and in the prices received for that product. In no year since 1887 has the amount of iron ore produced been so small as in 1893, and the published quotations of ores, which find an extended market, have been lower than ever before. The total output of all the mines, as reported, amounts to 11,587,629 long tons, as against 16,296,666 long tons in 1892, a decrease of 4,709,037 long tons, or 28·90 per cent. The following table will illustrate the remarkable decrease in production and in the value of ore at the mines, which the year 1893 shows as compared with 1889 and 1892, the only late years in which the statistics of valuation have been collected:—

Comparison of the iron ore product of the United States in 1889, 1892, and 1893.

Years.	Amount produced.	Total valuation of product, on cars or wagons at mines.	Value per long ton.
	Long tons.		
1889	14,518,041	$33,351,978	$2·30
1892	16,296,666	33,204,896	2·04
1893	11,587,629	19,265,973	1·66

The average value, therefore, declined 38 cents per ton in one year, while in four years preceding the total production was 26 cents per ton. Expressed in percentages, the decline in average value was 11·3 per cent. from 1889 to 1892, or approximately 2·8 per cent. per year, but the values reported for 1893 average 18·63 per cent. less than in 1892.

The deficiency in product was not confined to a few localities, but extended practically over the entire country; mines which had been producing uninterruptedly for many years were idle, or worked only sufficiently to maintain them in condition for possible renewed activity. At others, work was entirely suspended, and the mines practically abandoned, at least until such time as trade will offer a return sufficient to encourage the large outlay necessary to re-open them, an outlay which in some cases may be so great as to permanently remove what have been considered important mines from the list of producers. In the review of States which follows, the proportionate decline will be found to be greatest in some which contribute the largest quantities of ore, but the reduction is noticeable in all but two States, viz., Minnesota and Colorado, some new developments in the former, and improved operations at the only blast furnace plant in the latter, being responsible for the increased output over 1892.

The production of pig iron in the United States in the first half of the year 1893 did not show as great a decline as the latter half, for various blast furnace companies consumed stocks of iron ore which were on hand either at the furnaces or on docks. Later the hand-to-mouth policy of the purchasers of pig iron and finished iron and steel products, made necessary by a general financial stringency and uncertainty as to possible changes in existing tariff schedules, decreased the number of furnace orders and caused sharp competition among iron ore producers for those orders which were placed. Many blast furnaces, therefore, went out of blast or purchased less ore, and whatever ore was bought was obtained principally from mines whose accumulated stock had to be moved, or from the larger mines where the cost of production, due to labour-saving appliances, &c., was lower than that at smaller operations. Some new exploitations also were able to offer the furnace companies low rates, which forced the closing of some of the older, less favourably situated, and the smaller or the poorer equipped mines. Owing to a small demand and unremunerative prices during 1893, nearly all the iron ore mines in the United States either operated for but a portion of the year with a greatly reduced force, or closed down. This was the case even at some of the new mines on the Mesabi range of Minnesota, where, because of the methods employed of winning ore cheaply from shallow open workings by means of steam shovels, it was expected that the mines could run continuously at a profit when ore mining was impracticable elsewhere. The low price of the rich Lake Superior ores was a prominent factor in the decrease of foreign importations, and also of the large decrease in the domestic production of iron ore in the eastern States, particularly Pennsylvania, New York, and New Jersey.

The iron ore production of the United States for 1893 was slightly above that of Germany for the same period, the former holding by a narrow margin its position as the largest iron ore mining country in the world, which position it has maintained since 1890. Great Britain produced nearly as much iron ore as Germany.

To indicate the rapid decline in values, attention may be called to a standard Gogebic iron ore of well-known Bessemer grade, which in the early part of 1893 sold at what was considered at that time a very low rate, viz., $3·75 per long ton delivered on docks at Cleveland, Ohio. Other producers were slow to adopt this rate, claiming that it was insufficient to maintain a mine, but it was reported in trade journals, and has not been contradicted, that 60,000 tons of this same ore were sold in February, 1894, at $2·75 per long ton delivered at the same port, a drop of $1 from the previous low price. In March, 1894, it was reported that 100,000 tons of second grade Mesabi ores were sold at $2·25 per long ton, while 500,000 long tons of a standard Minnesota Bessemer ore were disposed of at $2·95 per long ton delivered at lower lake points.

As in previous years, considerable amounts of mill cinder, scrap, zinc residuum, blue billy, &c., were charged into blast furnaces with the iron ores, and while it has not been found practicable to collect all of this data, the amount of zinc residuum which was used has been collated; this amounted to 37,667 long tons, valued at $39,007, or $1·04 per ton. On the other hand, iron ore is largely used as a fix or fettling in puddling furnaces, as a flux in silver smelting, employed in the manufacture of paint, &c., and the quantities so used are practically offset by the amount of materials other than iron ore charged into the blast furnaces.

As above reported, the total output of iron ore in 1893 amounted to but 11,587,629 long tons, but there were many changes in mine ownership and management, many assignments made and receivers appointed, so that notwithstanding the improved facilities for collecting data, and the growing interest exhibited by operators and consumers in the publication of statistics by the Survey, it is probably just to allow, in addition to the actual figures collected, a percentage for mines not reporting, and the gross output of all the domestic iron mines may be stated at 11,625,000 long tons. However, in treating of the output of ore by kinds and by States the amounts actually reported to the Division of Mining Statistics will be used. It is gratifying to note the increased appreciation of the value of the mineral statistics among the producers of iron ore, and their general willingness to co-operate in securing correct data, but the changes in management or supervision of operations introduce a sufficient number of uncertain factors to cause the above allowance.

Classification of Ores.

The following classification of iron ores is the same as used in previous reports, and is practically the commercial division generally adopted by sellers and purchasers.

1. Red hematite comprises those ores in which the iron occurs as an anhydrous oxide, giving a red streak on a porcelain plate, the colour of the ore being generally a brownish red, or red, although sometimes a dark gray, almost black. This class includes red hematite, fossil, or Clinton ores, specular, micaceous ore, slate ore, &c., as well as some martite, which is a pseudomorph after magnetite.

2. Brown hematite, which contains more water than the red hematite, is generally of a brown or yellow colour, and when powdered shows a brown or brownish yellow streak on the porcelain plate. The varieties are known as limonite, turgite, pipe, ore, bog ore, gœthite, oolitic ore, &c.

3. Magnetite comprises those ores in which iron occurs as a magnetic oxide, generally black or blue-black, or occasionally steel gray or greenish in colour, and which when powdered give a black streak on a test plate, and are attracted by a magnet. In this class is included some martite, which is mined with magnetite.

4. Carbonate includes those iron ores which contain an excess of carbonic acid. They are generally gray, yellow, or rather buff and brown in colour, and are tested by the use of hydrochloric acid. They comprise the black band ores, clay ironstones, spathic ores, siderite, &c.

From some mines brown and red hematite, or red hematite and magnetite, or carbonate and brown hematite ores, are obtained out of the same workings, the extent to which ores are hydrated or weathered transferring them from one class to another, or different classes of ore are found intermixed or alternating in the same deposit. Wherever possible an attempt has been made in the statistical review to separate into classes the different ores coming from the same operations, but in some workings this was impracticable, and the product is credited to the predominating character of ore won.

Product by States.

The following table will show the character, according to the above classification, and the amounts of the iron ore produced in the various States and territories during the year 1893, from which it will be seen that there were mined 8,272,637 tons of red hematite, equivalent to 71·39 per cent.; 1,849,272 long tons of brown hematite, equivalent to 15·96 per cent.; 1,330,886 tons of magnetite, equivalent to 11·49 per cent.; and 134,834 tons of carbonate ore, equivalent to 1·16 per cent. of the total iron ore output of the country. Two or more States are grouped when separate amounts would disclose in any way the operations of an individual or corporate mining enterprise without express permission. The States are arranged in their order as producers of ore.

Production of different varieties of iron ore in the year 1893 by States.

States and Territories.	Red hematite.	Brown hematite.	Magnetite.	Carbonate.	Total.
	Long tons	Long tons.	Long tons.	Long tons	Long tons.
Michigan	4,636,128	23,420	8,776	—	4,668,324
Alabama	1,281,291	461,118	—	—	1,742,410
Minnesota	1,499,927	—	—	—	1,499,927
Pennsylvania	57,633	158,376	480,164	1,812	697,985
Virginia and W. Virginia	41,665	568,300	6,520	—	616,365
New York	15,890	35,592	440,693	41,947	534,122
Wisconsin	434,629	4,800	—	—	439,429
Tennessee	185,365	181,411	—	6,220	372,996
New Jersey	2,348	2,349	351,453	—	356,150
Georgia and N. Carolina	38,012	138,221	9,782	—	186,015
Colorado	4,654	139,117	27,179	720	171,670
Missouri	68,263	9,600	—	—	77,863
Ohio	—	—	—	68,141	68,141
Connecticut and Massachusetts	—	40,752	—	—	40,752
Kentucky	2,231	30,244	—	4,239	36,714
Texas	—	22,620	3,000	—	25,620
Maryland	—	2,075	—	11,755	13,830
Idaho, Montana, New Mexico, Oregon & Utah	4,600	30,777	3,339	—	38,716
Total	8,272,637	1,849,272	1,330,886	134,834	11,587,629

The following table, showing the quantities and character of the iron ore produced during the years 1889, 1890, 1891, 1892, and 1893, while illustrating the continued preference for hematite ores, demonstrates that each variety shared in the decline above mentioned.

Comparative production of iron ore, by kinds, in 1889, 1890, 1891, 1892, and 1893.

Kinds of ore	1893.	1892.	1891.	1890.	1889.
	Long tons.	Long tons.	Long tons.	Long tons.	Long tons.
Red hematite	8,272,637	11,646,619	9,327,398	10,527,650	9,056,288
Brown hematite	1,849,272	2,485,101	2,757,564	2,559,938	2,523,087
Magnetite	1,330,886	1,971,965	2,317,108	2,570,838	2,506,415
Carbonate	134,834	192,981	189,108	377,617	432,251
Total	11,587,629	16,296,666	14,591,178	16,036,043	14,518,041

An analysis of the table demonstrates that relatively red hematite has about held its position, the quantity mined being 71·47 per cent. of the total ore product in 1892 and 71·39 per cent. in 1893; brown hematite shows a proportionate increase from 15·25 per cent. in 1892 to 15·96 per cent. in 1893; the apparent gain in this class is offset by a fall in the percentage of magnetite ore won from 12·10 per cent. in 1892 to 11·49 per cent. in 1893, and a similar decline in the carbonate ores from 1·18 per cent. in 1892 to 1·16 per cent. in 1893. The relative increase in the proportion of brown hematite ore mined does not, however, indicate a gain, for the actual output of ore of this character is below the total for 1892. The bulk of the brown hematite was used in Virginia, Alabama, Tennessee, Pennsylvania, and Colorado.

(To be Continued.)

THE EXTRACTION OF COPPER FROM ALLOYS BY MEANS OF ELECTROLYSIS.*

THE electrolysis of copper alloys containing precious metals has, during the short time of its existance, established great technical and economic interest, and is employed in a large number of works both in Europe and America. In the year 1865 this process was introduced by Elkington, who used Welde's electro-magnetic machine for developing the current. Then the Hamburg Refinery, under Wholwill's direction, followed with Gramme's machine, and then Oker, under Bräuning's management, with Siemen's machine. In the carrying out of the process with Siemen's machine, Bräuning and the firm of Siemen's of Halske deserve great credit. At present the process is in use at Struthuetten near Siegen, Stadtberge in Westphalia, Oker in the Lower Hartz, Altenau in the Upper Hartz, Mansfeld, Moabit (Kaiser), Wittkowitz in Mähren, Stefanshuette in Hungary, Brixlegg in Tyrol, Kedabeg in the Caucasus, Works of the Russian Company in the Urals, Biache St. Wast (Pas de Calais), Marseilles (Hilarion Roux), Swansea and Birmingham in England Anaconda (Montana), Great Falls (Montana), Bridgeport (Connecticut), Newark (New Jersey), Boston (Massachusetts), Durango (Colorado), Baltimore, Chicago, St. Louis, Brooklyn in the United States, and Wallaroo in Australia. The largest plant the author has seen is in Anaconda.

The process depends on the use of suitably cast plates of alloy for the anodes of the circuit, an acid solution of sulphate of copper as electrolyte, and sheet copper for the cathode of the circuit; on the use of a suitable strength of current the copper of the anode dissolves and is deposited on the cathode, while the silver of the anode remains behind and falls to the bottom of the bath as mud. At the anode SO_2 is separated, and a corresponding amount of copper is brought into solution. By the solution of the copper at the anode an auxiliary energy is introduced into the current, which to a great extent counteracts the electromotive resistence. The work of the current is, therefore, comparatively small. The metals which are electro positive to copper remain, with the use of a suitable strength of current, in solution in the electrolyte, while the more electro negative elements (silver) remain behind at the anode. Should the strength of current reach above a certain limit, then all the metals present in the anode are dissolved and thrown down on the cathode. Thereby the copper becomes brittle and the outer resistance of the circuit is increased. By too slight a strength of current, cuprous oxide and finally even cupric oxide is deposited at the cathode. The more neutral the electrolyte the sooner the electro negative metals pass out of the anode into solution, and the easier the electro positive metals are deposited at the cathode. With less compact and brittle anodes the electrolysis is better carried out than with dense and malleable anodes, with cast and quickly cooled anodes better than with rolled anodes.

Concerning the behaviour of the constituents generally present in argentiferous crude copper used for electrolysis, Kiliani (Berg-und-Huetteum Feit., 1885, p. 249) made the following research, the conditions of which were laid down as follows:—The electro motive force was 0·1 to 0·25 volts, in strength of current 20 amperes per 1 square metre, a distance between the electrodes of 5 centimetres, and an electrolyte in which the solution contained 150 grammes sulphide of copper and 50 grammes of concentrated sulphuric acid.

Cuprous oxide passes as a bad conductor into the mud, but is gradually dissolved by the acid of the bath.

Cuprous sulphide (Cu_2 S) goes, when, as is generally the case, it is in small quantities, into the mud. When, on the contrary, it is present in large quantities it is decomposed with the separation of sulphur, and the copper is dissolved.

Silver, platinum and gold pass as powder into the mud, but if the solution has become neutral then the silver may go into solution, and will then be precipitated on the cathode.

Bismuth and bismuth oxide are dissolved, but separate out mostly by a secondary re-action as basic sulphate.

Tin is dissolved, but after a time separates out of the solution as basic sulphate. The tin produces an advantageous effect on the quality of the copper deposited on the cathode. With the given strength of current (20 amp. per sq.m.) the copper deposited on the cathode, from a neutral solution of chemically pure sulphate of copper, is of a very brittle and rough nature. If, on the contrary, the anode contains a large amount of tin, the copper thrown down on the cathode is malleable and free from excrescences; the tension also in the bath owing to the large amount of tin in the anode is very perceptibly reduced.

Arsenic passes into solution as arsenious acid both in acid and neutral solutions. As soon, however, as the latter is saturated it passes as a salt of arsenic into the mud. In a neutral solution the arsenic goes into the cathode precipitate, but in an acid solution this only takes place when it is comparatively poor in copper.

Is the arsenic present in the anode as an arsenic salt? Then, as this salt does not conduct the current, it passes in the presence of neutral solutions, entirely into the sediment; in the presence of acid solution, on the contrary, it will gradually be brought into solution as secondary arsenic acid.

Antimony passes partly into solution (in acid as also in neutral liquids), and partly remains behind on the anode. The dissolved antimony separates out by long standing of the solution as basic sulphate. The antimonic salts present in the anode pass first as non-conductors of the current into the mud, but are afterwards slowly decomposed by the acid of the bath with the separation of met-antimonic acid. The bases with which the met-antimonic acid was combined tend to neutralise the solution. So long as the solution is acid, and contains the above-mentioned quantity of copper, even when saturated with antimony, this element does not go over to the cathode, and at most it can only mechanically deposit some basic salt. On the contrary, should the solution approach, or be completely neutral; then the antimony is deposited together with the copper on the cathode, and the precipitate will be brittle. Also in cases when the solution is acid the antimony will be precipitated out of it with the copper when it is too poor in copper.

Lead is attacked in preference to the copper, and passes as insoluble lead sulphate into the mud. The presence of lead makes the bath therefore poorer in copper.

Iron, zinc, nickel, and cobalt are more electro positive than copper, and so are brought into solution sooner than the copper. They therefore make the bath poorer in copper and also in free acid.

Iron passes, with the least strength of current that the electrolysis of crude copper demands, into solution as ferrous salts, and is gradually changed into ferric sulphate by means of the air.

At the anode itself, the ferric sulphate first appears at a very high intensity of current, at which both oxygen and free acid step in. If the solution contain but 2 grammes of copper per litre, while the rest of the original copper contents have been replaced by iron, then the copper at the cathode becomes rough.

According to the above the anode mud contains gold, platinum, silver, sulphide of silver, cuprous oxide, sulphide of copper, basic bismuth, tin, and antimony sulphates, met-antimonic acid, copper arsenate, arsenides, and antimonides of metallic oxides, lead sulphate and slag, with which also iron, lime, magnesia, and silica may also occur in the mud. Some metallic copper also always falls down in a powdered form. The anodes are attacked simultaneously on the surface and in the interior. By the solution of iron, zinc, nickel, cobalt, manganese, tin, arsenic, antimony, and bismuth the electrolyte becomes richer in those metals but poorer in acid and copper.

The impoverishment of the solution in copper is partly cancelled, since an acid solution of copper vitriol is reduced by means of the copper to a basic sulphate, which, by means of the air, is in turn converted into cupric sulphate. By means of this accessory re-action (on which depends the separation of copper from silver in the so-called lixiviation process), so long as the solution remains acid, copper will be dissolved, and the more so the weaker the strength of current, and the more the solution (on account of the quick circulation of the same) comes in contact with the air.

In the interest of continuous working, it is necessary to maintain the acidity of the solution by the occasional addition of sulphuric acid, and also to make up for the loss of copper with copper vitriol.

By reason of the various metals in the anode passing into solution, neutralisation of the bath is brought about, which exercises in many respects a very objectionable influence on the conduct of the electrolytic process. The solution becomes a worse conductor, foreign metals pass over into the cathode precipitate, and besides copper, cuprous oxide is thrown down at the cathode as well.

The conductability of the solution is lessened as it becomes neutral, so that at 5 centimetres distance between the electrodes, and with all the other conditions remaining the same, the potential difference of the bath increases from 0·1 volt. to 0·25 volt. The above-mentioned metals, arsenic, antimony, and tin, pass into the cathode precipitate and make it brittle. Furthermore, the strength of current employed does not suffice to completely decompose the copper sulphate in the electrolyte. Therefore a certain amount of cuprous oxide is thrown down with the copper at the cathode, which makes the deposit so brittle that it can be pulverised in a mortar. If the solution is acid, then the cuprous oxide is re-dissolved owing to a secondary action. With a neutral solution, on the other hand, it remains clinging to the cathode.

To obtain good copper, as lively a circulation of the solution as possible is necessary; the copper deposited on the cathode is purer and more malleable the quicker the solution is circulated.

If the solution is not in motion, then it is richer in copper at the anode, and poorer in copper at the cathode. The poorer copper solution rises to the top of the bath, whereby there is a layer of fluid of greater resistance in the circuit. Hereby it is possible that besides the copper, other metal or hydrogen may be separated out.

The following table, which is the result of a number of experiments made by Kiliani, shows the influence of impurities in anodes and solution, also the influence of the circulation of the solution on the potential difference of the bath. The experiments refer to a distance between the electrodes of 5 centimetres, and a current of 20 ampere per 1 square mile.

1 litre of the solution contained	Anode.	E. M. F. with circulation of the solution.	E. M. F. without circulation of the solution.
150 g. crystallised copper sulphate, and 50 g. sulphuric acid	Pure copper ..	0·095	0·095
	Chili bars ..	0·120	0·120
	Copper regulus..	0·40	0·40
150 g. crystallised copper sulphate	Pure copper ..	0·24	0·243
	Chili bars ..	0·275	0·278
	Copper regulus..	0·532	0·535
7·96 g. crystallised copper sulphate; 158 2 g. crystallised ferrous sulphate and 50 g. sulphuric acid	Pure copper ..	0·22	0·75
	Chili bars	0·25	0 75
	Copper regulus..	0·50	1·00
The same solution only without sulphuric acid..	Pure copper ..	0·30	1·10
	Chili bars	0·35	1·15
	Copper regulus..	0·75	1·30

The Chili bar anode contained 96·6 per cent. of copper, 0·403 per cent. silver, 0·011 per cent. gold, 1·23 per cent. arsenic, 1 per cent. iron, and 0·54 per cent. sulphur.

Concerning the relation between the strength of current and the electro-motive force with a given power we can maintain the same quantity of copper either with increased current and less tension, or with less current and more tension. For instance, it is all the same whether a machine of 30 volts. E.M.F. and 120 ampere strength of current is used, or one having 15 volts. E. M. F. and 240 ampere current. It is only necessary that in each case the density of current is the same—*i.e.*, that on a given electrode surface the same quantity of electricity enters, as the most suitable density of current for the electrolysis of copper, 20 to 30 ampere per square metre is given. Machines with low electro motive force require very thick and short conductors. Also in working disturbances caused by the least increase of resistance in the bath is much easier than with the use of higher tension. On this account, with the new machines, one arranges for a greater electro motive force and less strength of current.

With a high strength of current a small number of cells are used; with a low strength of current a corresponding larger number are employed.

In the following table is given the duty of different dynamo machines of Siemen's and Halske at the Oker Metallurgical Works:—

Effect of the motor in horse powers.	Dynamo type, Siemen's and Halske.	E. M. F. in volts.	Strength of current in ampere.	Per effect in volt. ampere.	Number of cells.	Copper precipitated in 24 hours, in kg.
7–8	C^1	3·5	1030	3500	12	250–300
7–8	cF_2	30	120	3600	80	250–300
7–8	cH_7	15–20	240	3600–4800	40–50	250–300

The performance at a few works with gramme machines is given as follows:—

	Plant: Oesehger, Mesdach, and Co., Biache St. Waast, Pas de Calais.		Plant. Hilarion Roux, Marseilles.
Machine	Gramme.	..	Gramme.
Horse power	8	..	5
E. M. F. in volts.	4	..	8
Strength of current in ampere..	700	..	300
Number of baths arranged one after the other	20	..	40
Effective cathode surface in one bath in sq. m.....	21·1	..	22·5
Density of current ampere in sq. m.	33·1	..	13·3
Copper precipitate in 24 hours kg.	400	..	250
Refined copper per hour and h. p. in kg.	2·08	..	2.08

(To be Continued.)

* Translated from Dr. Carl Schnabel's Handbuch der Metallhuettenkunde: pp. 263–278.

MINING NOTES FROM JOHANNESBURG.

By H. BUSH, M.E.

Buffelsdoorn.

THE seam of coal near this mine has been prospected and the seam penetrated for 14 feet thick, the top seam being 7 feet, the remaining 7 feet is of a superior steam coal. This coal can be supplied to the mine at £1 per ton; this will effect a saving of at least £15,000 per annum. The reef on this property has been proved to a depth of over 400 feet and on the strike about 550 feet. The ore does not need sorting, a fair sample of the reef is now being milled. The reef is 4 feet wide, and it is all sent to the mill, and the profits of about £7000 per month can easily be maintained. The life of this mine is fully 35 years, and at the present market value this is one of the lowest valued properties in Africa. I expect to see these shares steadily advance to their recent value, viz., 37s., and in the near future to 60s.

New Chimes.

The north reef in the east end of the mine at the 6th level is opening up splendidly, and development is being pushed ahead. Sinking to the 8th level is also being carried on. All the surface arrangements are excellent, including electric pump and the sorting floor, which will be completed shortly. The mine is well ahead of the mill, and monthly profits will be equal to £4000. There are large reserves of ore in sight, and, with the almost absolute certainty of dividends at the rate of 40 per cent., the shares of this company should be bought for £4.

Alexandra Estate.

Under the supervision of a well-known expert prospecting is being pushed along vigorously, and the newly-discovered reef of Hill's Waterfalls is being rapidly opened up. This reef is 2½ to 3 feet wide, is highly payable, and traverses a considerable distance through the estate. The company financially is in a good position, having a large cash balance, besides having large share interests in some of the Rand mines, also options on large blocks of shares, which the late rise in value of Kaffir stocks has enhanced. Another valuable asset of this concern is the tree plantation, which, taken at approximately 200,000 gum or eucalyptus trees, should very shortly be worth at least 20s. per tree. These shares are cheap at present price of about 5s., and are good buying for a rise of 10s.

Crown.

It is no easy matter for the manager to keep the battery going, the reefs not being so large as in other mines.

Pioneer.

This mine looks well, and shareholders can look forward to substantial dividends for the next five or six years. All development work has been let by contract, and this is a great saving to the company.

Sheba.

The mine is not well ahead in development, and the dump is being largely drawn upon to keep the mill at full swing. The low level tunnel is being energetically pushed ahead. When the reef is struck they will then have many month's ore in sight.

Champ d'Or.

There has been heavy buying all the week, and shares must go considerably higher. The opinion at last has been driven home that this property will not only maintain the present output, but increase it considerably. The mine is opening up well.

Champ d'Or Deep.

When the battery starts this stock will become a favourite one amongst dealers. The mine being opened up so well, and the prospects improving daily. These shares are not dear at par and will shortly see that price. I strongly recommend them as a safe investment.

GOLD MINING IN BRITISH COLUMBIA.

(FROM A CORRESPONDENT.)

AFTER a lapse of a quarter of a century the Prince Capital has awakened the fairy Wealth, who slept in the rugged gorges of old Cariboo. Two companies were formed early this year to re-work some of the ground that yielded so plentifully in the sixties. It was claimed that then it had only been scratched, and that now, with improved appliances and plenty of capital, the same old ground would pay well. Work was commenced early in the spring, and the other day two bricks of gold were received at the Bank of British Columbia in Vancouver. The heaviest, which represented 47 hours' washing at the Cariboo Company's claim, was valued at $5140; the other from the Horsefly is worth $4880, and represents 106 hours work.

In South Kootenay the Poorman (Quartz) Mine is steadily turning out gold with its 10 stamp mill. At Forty-nine Creek the Hydraulic Company, after encountering many difficulties, has at last got to work. From Trail Creek many tons of refractory ore are being shipped to the smelter at Tacoma. Indications of gold are being found everywhere, but as yet have not led to anything big. In many of the creeks excellent prospects are obtained, but the difficulty of contending with floods and the nature of the country necessitate the introduction of capital. It is the same with reefs. Outcrops of promising showing have been found, and "float" is being brought in from many points. Expensive drills are required to prove these ledges, but, unfortunately, their owners are poor men. It is hoped that the Government will presently supply one or more free drills. It may fairly be said that this country is worthy of the attention of the capitalist. To any man acquainted with mining British Columbia, and especially South Kootenay, now offers a rich field of good investments to be had cheap.

A NEW CAPE STEAMER.—In response to the invitation of the directors of the Union Steamship Company, a large number of guests travelled on Monday from Waterloo to Southampton, in order to take a trip round the Isle of Wight in the *Guelph*, which is the latest addition to the company's fleet. The *Guelph* is a steamer of 4916 tons, and was launched on June 26 last from Messrs. Harland and Wolff's yard at Belfast. She is propelled by twin screws, driven by two sets of triple expansion engines, developing high indicated horse power. While providing a very large carrying capacity for cargo, on a light draught of water, she has unusually complete accommodation for first, second, and third class passengers, the majority of whom will be carried on the upper deck. She is specially fitted with every convenience, including electric lighting, refrigerators, and cold chambers for the conveyance of stores, fruit, and provisions. The success of the three twin screw steamers *Gaul*, *Goth*, and *Greek*, which are sister ships to the *Guelph*, has been most pronounced, and no doubt the new vessel will sustain the reputation which has been acquired by the fleet in the past.

MEETINGS OF MINING COMPANIES.

POLBERRO MINE COMPANY.

Exhaustive speech from the chair.—Decided prospects for the future.—The price of tin, and Mr. Strauss.

A SIXTEEN WEEKS' meeting of the shareholders in the Polberro Mine Company was held on Wednesday, at the offices, 37, Walbrook, the chair being occupied by Mr. JOHN B. REYNOLDS.

The SECRETARY (Mr. F. J. Harvey) read the notice convening the meeting.

Copies of the statement of accounts and the manager's report were circulated in the meeting.

Captains CHARLES THOMAS and JOHN HARPER, (the company's agents) reported as follows:—

> Since the last meeting, when it was decided to sink Trevaunance engine shaft from the 14 below adit on Pink lode, this shaft has been sunk and risen by three pares of men, working at different points on the line of the shaft, a total depth of 32 fathoms below the 14 fathom level, and is now communicated to the 26 fathom level. We have commenced to cut ground at the 14 for the angle bob, which it will be necessary to place at the junction of the vertical and the inclined portions of the shaft, and we have made arrangements for the construction of the angle bob. It will probably take about 3 weeks to complete this work with our present staff. We are cutting ground and preparing to sink the shaft below the 26 on the Pink lode, and hope to be able to sink 10 fathoms below the 26 by the next meeting. The prospects in sinking are excellent, as we shall be sinking immediately underneath the 26 cross cut north, and consequently must meet with the numerous branches intersected in the cross cut as they fall in upon the lode. Some of these branches are of considerable size and exceedingly rich, and we may reasonably expect that the falling in of such branches on the Pink lode will produce very satisfactory results. Further, we are glad to observe that the killas is becoming much more favourable in its general character as we get further north. The 26 level has been driven nearly 50 fathoms east of cross cut on the Pink lode. The lode in this end has very much improved during the last few weeks. It is now fully 4 feet wide, and produces 50 lbs. tin to the ton. Considering that this end is now approaching the cross course, in connection with which valuable deposits of tin have been worked at shallower depths on the same lode, and at about the same depth on parallel lodes, this recent improvement is obviously of great importance. Since the last meeting the men have been taken from the 26 west on Pink lode to assist in sinking the shaft; consequently we have not made much progress in driving this end of late, several crossings have been driven through, and we expect a more settled lode on getting beyond their influence. We shall resume driving this end as soon as possible. We have opened 9 fathoms east and west of cross cut on the South House lode since the meeting. For the distance the lode is 5 to 6 feet wide, and averages 35 lbs. tin to the ton.

Captain CHARLES THOMAS also supplemented the agents' report. He said that since the last meeting they had started to sink the shaft below the 14 with 15 men. They also rose in the back of the 20 at the same time. Afterwards they put a pare of men to sink below the 20, another pare to rise in the back of the 20, and another pare to rise in the back of the 26. They had been rising and sinking then at four different points. The shaft was about 12 feet long and 6 feet wide, and the whole of the ground was showing very well. Having sunk and risen 32 fathoms they had driven east and west upon the Pink lode. At the western end they had not been able to do a great deal. At another part, however, they had a very good looking lode 4 feet wide. There were some very fine stones of copper in the present end; hence they had a strong well-defined mineralised lode for the whole of the 50 fathoms. In the western end they drove with a little tin for 10 fathoms, and then communicated with the 26. The lode in the bottom would yield on an average 60 lbs. of tin to the ton. There was also a tolerable piece of stoping ground there. The Pink lode was underlying north. They were cutting the ground at the 14 for the angle bob, and there were six men preparing to sink. When the angle bob was completed they intended to put in a skiproad. Seeing how all the lodes converged, he might say that he had been connected with Cornish mining for 40 years, but had never known such a thing as this to fail. (Applause.) He did not hesitate to say that the company had a very good property, and he advised them to push it on as rapidly as possible. For his own part he did not see where failure could creep in. If the shareholders would only look at it for themselves they would see that it must turn out well.

The statement of accounts submitted showed the following items on the side of receipts:—To balance from last account, £116 10s. 7d.; call made June 4th, 1894 (one shilling per share on the 18,000 shares of the company), £900; less on 40 forfeited shares, £2; £898 Sale of black tin to the Consolidated Tin Smelting Company (Limited), 1 ton 2 cwt. 1 qr. 20 lbs. at £43 5s. per ton, and carriage 3s. 9d., £48 13s. 9d; discounts from merchants, £6 7s. 9d.; balance due to bankers, £31 17s. 3d.: total, £1101 9s. 4d. On the side of expenditure there were the following items:—By labour costs: Pay 2nd June, 1894, £110 10s. 1d., 16th June £54 13s. 9d., 30th June £129 14s. 9d., 14th July £80 15s. 3d., 28th July £176 6s. 1d., 11th August £71 13s 5d., 25th August £122 11s., 8th September £69 16s. 6d. —£816 0s. 10d. By merchants' and other bills £271 18s. 1d., dues to the Duchy of Cornwall (less income tax), £1 7s. 10d., dues to the Lords of Tywarnhayle Tyas (less income tax), £1 7s. 11d, bankers' charges (interest, postage, &c) £10 14s. 8d.; total £1101 9s. 4d.

The CHAIRMAN said: We are exceedingly obliged to Captain Thomas for his very able and lucid statement. I will content myself for the moment with moving formally the adoption of the statement of accounts, and the agents' report. I will not at present take up the time of the meeting by making my usual statement, for we have with us this morning Mr. Strauss, who has rendered us very good service, and who, in seconding the resolution, will no donbt tell us something about the accounts and the prospects of the tin market. I may say that the committee have had a very prolonged sitting this morning, when everything was gone into, so that all the members of the committee are thoroughly acquainted with the business.

Mr. STRAUSS said: Mr. Chairman and gentlemen, I have much pleasure in seconding the resolution—"That the statement of accounts and the manager's report now presented be and are hereby received and adopted," and in doing so I will add that the accounts, as usual, are most clear, and that they are kept on the no credit system. We only have a balance of £31 owing to the bankers, of which the Chairman will speak later on, and I am sure we are very much obliged to the secretary and purser of this mine for keeping the accounts in so exemplary a manner. I am sorry that I cannot speak at so great a length as I should like, but I shall have to leave presently. The Chairman has, however, asked me to add a few words about tin, and I have great pleasure in doing so. The last time I had the honour of speaking publicly about tin I intimated that the stocks of tin were gradually getting into stronger hands, and were becoming concentrated. (Hear, hear.) At the time that intimation excited very little notice, but now that the effect is becoming plain to all, of course, it is in everybody's mouth. To compare that combination of buyers which now exists to the syndicate of Mr. Secretan, as the newspapers have recently done, is simply absurd. Mr. Secretan went into tin at above £90 and drove it to £170. Of course consumption naturally resisted such an inflated price and the upshot of it was complete failure. This time we start with a price of £65, which is now at about £74 or £75 per ton, and it is too ludicrous to make a comparison between a syndicate at £170 and a combination of buyers at £75. Even after the complete collapse of Mr. Secretan's syndicate, the lowest point tin touched was £75 per ton. I know too much about this combination of buyers to speak more fully upon it. It would be hardly fair to the people who are interested if I were to let out their secrets; but even at the risk of repetition I wish again to impress upon you that in the first place the future of tin must always depend on supply and demand, and in the second place—only in the second place—upon the holdings, which only become of vital importance when supply and demand are equalised, as was the case up to about three or four months ago. Now, what we Cornish miners want particularly is not so much fluctuations and temporary inflations of values; what we require is a steady and satisfactory price permanently maintained. (Hear, hear.) The holdings of the tin have vastly improved, and the reason of the rise of about £8 or £10 a ton lately is naturally owing to this improvement of holdings. But the great factor to be considered—not perhaps for the near future, but for the more distant future—is the question of supply and demand, for no combination of buyers, be they ever so strong, can permanently influence the market if either supply or demand work against them. Now, nobody can for a moment maintain that a price of £75 would in any way adversely influence consumption. On the contrary, the price to consumers is a cheap one, and we have every reason to hope—in fact it is almost certain—that consumption will gradually increase as it has always done. As regards supply, of course there the difficulty arises. In the first place the Banca Company have increased their output a little, and we shall, no doubt, get a little more next year than this, but that will hardly amount to more than about 1500 or 2000 tons a year, which is easily absorbed by consumption. The next item is the production in South Africa. At present South Africa produces at about the rate of 100 tons a month, and owing to the natural difficulties there this production cannot increase rapidly. Still, no doubt, we must keep an eye on South Africa, because in all probability a steady increase will take place there. But the chief source of supply is, as you are aware, the Straits Settlements. Now, a large increase has taken place there almost continually during the last 5 or 6 years, and the question which must ultimately decide the price of tin is, How far this increase will continue? There are some of us who think that a maximum of the production is reached; but there are other people who predict a heavy increase of production from the Straits Settlements in the next 12 months or two years. It behoves us all to watch the Straits production, which can easily be done by looking at the shipments from month to month. Should those shipments show no increase, there is positively no reason why the present price of tin, or even a higher one, should not be permanently maintained. Should, however, the next three or four months show that a further increase is going on there, then all I can say for Cornish mining is that it is to be hoped the price of tin will not be driven down to such a point as to occasion as disastrous a result as we have had many times before. The whole crux of the position at this moment lies in the Straits shipments, and syndicate or no syndicate—for the effect of a syndicate can only be temporary—if the Straits shipments continue to increase a rapid rise is to be disparaged. If, however, the shipments from the Straits continue moderate there is no reason why tin should not be permanently maintained even at a price much higher than we know of to-day. I hardly like to go further into the particulars of the syndicate—in fact, it would be of no use, because the influence it may exert can only be temporary. The great thing we have to look out for is what the price will be permanently, and there you must steadfastly keep your eye on the Straits production.

A SHAREHOLDER enquired how long it would take to get down to the junction.

Captain THOMAS replied that all possible expedition was being observed in getting down, though they did not expect to reach the junction before the meeting after next. They might meet with an improvement in the shaft at any time, and it depended upon the character of the lode as to where they should stop and commence driving east and west.

The CHAIRMAN said: Now, gentlemen, I have very much pleasure in making some remarks before submitting the resolution for the adoption of the report and accounts. As I have already told you, the committee had a very prolonged sitting this morning. They have been sitting for an hour and a half, and have gone very minutely into the affairs of the company. Of course, everything is perfectly satisfactory and straightforward. That goes without saying, seeing the character of the officials by whom we are surrounded; but you will observe that we have overrun the constable to the extent of £31 17s. 3d., which is a very exceptional thing for us to do. In addition to that the sum of £5 has been overlooked, and, consequently, has not been charged in the August sheet. Excepting these two items, making altogether £36 17s. 3d., there were no liabilities due and unpaid when this account was made up, and that was yesterday. Now, gentlemen, I may explain that little item if you wish me to do so, and the explanation is very simple. When we met at the last meeting, at which I put the affairs of the company before the shareholders, I told them that I thought we should be in a better financial position next time than we were then. After that meeting Captain Charles Thomas had an interview with me, and at that time he said—"I tell you what it is, Mr. Reynolds, if we put the fullest possible force on to the sinking of the engine shaft so that the work may be done as expeditiously as possible.—(hear, hear)—the chances are that we may spend a little more than we have provided for to-day." My reply to him was—"Go ahead, Captain Thomas; put the fullest possible force in that shaft. The shareholders want to have an end to the calling time, and they want to get at the result which you believe is before us as quickly as they possibly can." (Hear, hear.) Well, he put the fullest possible number of men at the work, and the result you see to-day, which I will say is simply a magnificent result. (Hear, hear.) It could not possibly have been attained in a shorter time by any company in this country, whether they employed rock drills, or whether they did not. At the time when I saw the agents on the question I said—"If you can do the work more quickly by rock drilling, have rock drilling," but I was satisfied after interviews with an engineer who was well up in rock drilling matters, agents of the mine and other persons, that this would be no rock drilling matter, and that they would really be able to sink as quickly by hand labour as by rock drilling. Well, now, gentlemen, this has been a very heavy and expensive bit of work; but it has not been a tedious work. We have done it in four months, and that shows what can be done in mining, when miners go at it with the determination to work as expeditiously as possible. You will observe, gentlemen, that we have a small asset here which we can realise in a moment—and which consists of 40 shares. I suggested that, perhaps, these shares could be sold to pay this small balance due to the bankers, but I was overruled by a friend, who said that it would be very unwise to sell these shares, as they were certain to improve in value. I agree with that opinion, and I only wish that there were 5000 shares instead of 40 to the credit of the company. That would be a splendid asset, and would make me much better satisfied than I am now. But, gentlemen, there is no chance of our having any more forfeited shares. Shareholders now know better than not to pay their calls in this mine, as you will admit when you observe that there is not a single penny of arrears. (Hear, hear.) No arrears shall be allowed so long as I am Chairman of this company. It is unfair to those who pay their calls, it is disastrous to the financial interests of the company, and it is likewise disastrous to the shareholders thus to give them extended time for payment. Those persons who cannot afford to pay calls have no business in an enterprise of this kind. We must stick to that, and see to it that we always have the calls promptly paid up, and never disgrace ourselves by owing any man anything. The public demand that of this company, and it is a demand which here shall be most conscientiously responded to. Now, gentlemen, with regard to the future. A day or two ago, I had a note from my friend and excellent fellow-officer, Mr. Hancock. I don't know why my friend did not tell me before; perhaps he thought that my nervous temperament was so highly strung that I could not bear the intelligence—in which he suggested to me that the work in sinking below the 26 could be much more expediously executed if we could have a little more money during the next four months. Then came Captain Charles Thomas yesterday and almost apologised for the idea of this extra expense. He said that if the shareholders did not see their way to give another 6d. he thought, perhaps, another 3d. would do. In that case, if they were to give another 3d. or 6d. call—we should pick up some months in the attainment of our object. I was amused at the modesty of my very able friend, the general manager of this company. I am afraid he thought I was rather hard up for cash, and that he wished to deal very gently with such a large holder of shares. I wish to tell him and you, gentlemen, that the accident of my being a large shareholder in this company shall not retard the working of its mine. (Cheers.) So long as I am satisfied that success is before us—not in the far-off, dim and distant future, but in the near future—let me tell the manager of this company that he shall have any amount of money I can command for the attainment of the object in view. The statement he makes as to the future of the mine will be confirmed by any engineer or expert you like to call in. He does not ask you to believe in his words alone—though they are surely guarantee enough — but he says that his opinion may be confirmed by any reliable expert in England, when he says that at this junction you have a certainty, if ever there was one in mining. (Hear, hear.) We must get down to that junction with all possible despatch. We must not let a moment be lost, and if an extra £300 will be of service towards the attainment of the object they shall have it so far as I am concerned with the greatest pleasure in the world. Captain Thomas has told us that we shall sink 10 fathoms more before the next meeting. That may appear to some a very short distance, but you must remember that they have a lot of preparatory work to do before they will be able to begin sinking to any advantage at all. This £300 extra will, with other matters, make a call of 1s. 6d. a share necessary, because I calculate that the ordinary loss during the progress of this work will be about the same as it was last time. But the Polberro Mine is in difficulties. We have more tin than we can deal with. We have a quantity of tinstuff on the mine at present, notwithstanding that we have not made any effort during the last four months to bring any to surface, the fact being that all our efforts have been concentrated upon the sinking of the engine shaft. The difficulties of Polberro will be like the morning cloud and the early dew—of a transitory nature; they will pass away before you know it. It so happens that we have an engine already waiting, which has been bought and paid for. We have also stone for the building of the engine house on the mine, so that we shall be able to put in our stamps—a sufficient number to more than enable us to pay the costs until we get down to this junction, and after that I hope the mine will itself pay for any additional stamping power that may be required. My excellent friend opposite asked how long we shall be before we reach the junction. I have put that question very pointedly this morning at the committee meeting and I was assured that it would take about eight months as near as can at the present time be estimated. They do not anticipate encountering any difficult ground there. On the contrary, the ground has always been more favourable the further we have gone north; so that altogether, so far as this section of the mine is concerned, you may depend upon it, gentlemen, that I indulge in no exaggeration when I say that we have a magnificent property. (Applause.) What is this junction? It is the meeting together of two or three or more rich lodes. Now, what distance shall we have on that junction? No less than 1 mile. It would not do to make comparisons. I never indulge in comparisons myself, but I say that it is my firm conviction that we have in Polberro not only the finest property in St. Agnes, but one of the finest properties in England. (Hear, hear.) Of course, this is only one section of Polberro. Upon those words I put especial emphasis. There are other sections which may have to be brought into operation hereafter, which I hope we shall be able to do with the greatest possible ease. Gentlemen, I wish now to acknowledge the great courtesy and kindness I have received—together with the managers and officers of the company—from the shareholders of this company who call at the offices from time to time to make themselves perfectly acquainted with the affairs of the company. To those I feel indebted. It shows appreciation and due attention to their interests, to say nothing of those of the company, and I can only say that it will be a very proud day for me and for the other members of the committee when we are called together to affix our signatures to the dividend cheques. Towards that consummation we are working as cordially and as energetically as we possibly can. Our object is to keep faith with one another, with the public and with everybody concerned, and by that we hope we shall be successful in making Polberro a very valuable dividend-paying mine. (Applause).

The CHAIRMAN then put the motion for the adoption of the accounts and agents' report, which was carried unanimously.

The CHAIRMAN; After my statement you will be prepared for this next resolution, which I will move:—

> That this meeting has great pleasure in acting upon the recommendation of the general manager by providing £300 required for additional machinery for sinking the engine shaft, and therefore it is resolved, in order to meet this expenditure and the ordinary requirements of the company for the next three months, that a call of 1s. 6d. per share on the shares of this company be and is hereby made, payable to the bankers of the company, Messrs. Bolitho, Williams, and Co. (Limited), late West Cornwall Bank, Truro, on or before Wednesday, October 10th, 1894.

Mr. BUDD seconded the resolution.

Mr. HANCOCK, in answer to the CHAIRMAN'S invitation to speak, said that the manager had spoken so fully as to the position and prospects of the work at the mine that there was little for him to do but corroborate what he had said, which he did with the greatest pleasure. During the last 16 weeks the engine shaft had been sunk 32 fathoms, and no less than 1000 tons of stuff had been brought to the surface. To have accomplished such a piece of work in so short a time reflected great credit upon the management of the mine, upon the workmen (hear, hear), and the dialler. In Cornwall recently questions had arisen as to the ability of the dialler. One eminent counsel had referred to the matter in the Law Courts. He believed the idea to have been that it was impossible for a man to be a competent mining surveyor or dialler until he had reached 70 years of age. One of our English judges had said that a man would be a physician or a fool at 40. The dialler at Polberro was not yet 25 years of age, but he had proved himself by the execution of this work to be a thoroughly competent man. The shareholders had heard him (the speaker) refer upon more than one occasion to the Chapels Downright and the South House lodes, and it must be plain to any man who understood the plan at all that there must be immense quantities of tin at the junctions. He invited the attention of the meeting to the piece of tinstone on the table, which had come from Chapels Downright. There was not a miner in the district who was not of opinion that when they got down they would be amply rewarded for the work they had done. (Applause,) From his knowledge of the position of the Pink lode he was of opinion that when it reached the junction it would be of sufficient magnitude with the other lodes to afford working for a whole generation. It should not be forgotten that they had a mile on the course of the lodes. A little further to the north from where they were working there were lodes as well known as the celebrated West Kitty lode, which had been worked in days gone by in other portions of the property. The underlie shaft would serve two purposes. In the first place it would serve as the engine shaft; and, secondly, it would act as a cross cut. The great secret of successful Cornish mining lay in cross cutting, and the shaft must be equal to a cross cut, for it went right away through the property, and any lodes standing to the north must be intersected. In conclusion, he could only say that he had now a much better opinion of the property than ever before, and he felt confident that before long they would be able to pay dividends, and then the celebrated West Kitty would have to play second fiddle to them. (Laughter and applause.)

Mr. PAYNE also expressed his perfect confidence in the future of the mine. He thoroughly believed they were on the high road to prosperity, for he could not for one moment see how there could be any mistake in the estimate which had been so widely formed of the prospects at the junction.

Mr. GLASS heartily concurred in this view, and said that Polberro had always in Cornwall been accounted a good speculation, when once it had got a good start.

The resolution was then put and carried unanimously.

On the motion of Mr. JACOB, seconded by Mr. GLASS, the following resolution was unanimously carried:—

> (3) That the best thanks of this meeting be and are hereby presented to the committee of audit and finance for their past services, and that the

following do constitute such committee until the next general meeting of the company, viz.:—The Hon. Ashley Ponsonby, Messrs. A. Strauss, W. H. P. Martin, J.P., S. Payne, G. C. Hancock, F. W. Michell, and Captains Charles Thomas, John Harper, Joel Hooper, and John Williams.

The CHAIRMAN then moved a resolution, increasing the salary of the resident agent—Captain John Harper—to eight guineas per month, which, having been duly seconded, was carried unanimously, Mr. REYNOLDS and one or two gentlemen present paying tributes to the energy devoted by the captain to the interests of the company.

The CHAIRMAN, at the termination of the business, proposed a hearty vote of thanks to the general manager and staff for the efficient manner in which they had conducted the business of the company.

This was seconded by Mr. PAYNE and carried unanimously, Captain THOMAS briefly returning thanks.

The proceedings then terminated with a vote of thanks cordially given to the Chairman for presiding.

THE ARGENTINE CONCESSIONS, LIMITED.

The present position of the company's affairs.—A hopeful statement from the chair.

The first ordinary (statutory) general meeting of the Argentine Concessions (Limited) was held on Monday, at Cannon-street Hotel, the chair being occupied by Mr. G. F. TAVENOR.

The SECRETARY (Mr. W. P. Owen) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen, the ordinary business of this meeting is simply to comply with the Governmental regulation in regard to statutory meetings. It may, therefore, be well for me to inform you as to our exact position at the present moment. The Concessions was a company formed recently with a capital of £25,000, of which £15,000 was kept as working capital. We have obtained a large concession in the Argentine, for the purpose of prospecting for minerals, from the West Argentine (Limited). This latter company had a very large concession and mines out in the Argentine, and, I belive, did a certain amount of work there—in fact, at one spot a large amount of work. Some four years ago, when the depreciation occurred in Argentine securities generally, there was a perfect collapse all round, and the West Argentine Company stopped further work, and the properties remained unworked from that time up to when this company took them over. The property most advanced would be the Carolina Mine, which has been driven to a far greater depth, and which has yielded ore to the amount of £25,000. There is on the spot a very fine plant with some 30 stamps and fittings of a very complete and fine character. This plant and stamps, I believe, cost the former West Argentine Company close upon £40,000; so that you will observe, gentlemen, that we are in the position of having sufficient stamps and mining material on the spot, and that we have a working capital of some 150,000 shares of 2s., representing £15,000. When this company was formed your directors looked about to find one of the best mining engineers they could obtain, and they were fortunate enough to secure the services of a gentleman called Mr. Francis Berrard Dering. Mr. Dering was highly recommended by some of the best firms in the City of London, and I may say that after his engagement Messrs. John Taylor and Sons were somewhat disappointed at not having obtained his services themselves. We can rely upon it, therefore, that we really have one of the most trustworthy engineers for the mine we could possibly have selected. His reports will be sure to be thoroughly reliable, as we know his character in the mining world stands too high for him to give us anything but a straightforward and honest expression of opinion. Having been so successful in securing an able manager, I might, perhaps, inform you that we have already received from him two letters. He writes in the first instance from Buenos Ayres, and he goes on to say:—"In my last letter of the 1st August I mentioned that the levels on the reef at the adit had caved in. In consequence I could only penetrate a distance of 30 yards north and about 60 yards south. At surface, about 240 yards on the run of the reef to the south of the adit, a considerable number of old workings indicate the existence of a counter lode or crosscourse. These are very numerous and deep, and worked after native fashion, so that I am led to believe that good paying ore was here discovered, and in the tracing of the plan you gave me I perceive that at the adit level this was driven on for a distance of 73 metres. To my surprise, however, the plan shows that on the two lower levels below the adit this counter lode was never reached. Considering the amount of working done here by the natives, I can scarcely suppose that it was found to be very poor, although below the adit it was not deemed worthy of a trial. In order to prove this ground, I am getting a hand-winch (jack-roll) made, which I will place over one of the old workings, to endeavour to reach the adit level at this point. I shall also here be able to discover to what extent the level south of the adit has caved in, and where it will pay to re-open it." On the 15th August we have another letter which states:—"I have obtained a letter from Buenos Ayres, from Messrs. Runciman and Co., and they are engaged in dismantling and preparing engine and boiler for removal to Carolina, to pump out the mine. I have placed a winch over the crosscourse I mentioned in my last letter, and two men are clearing out the fallen rubbish. I hope by to-morrow or the next day to have temporarily timbered over the shaft, so as to be able to run trucks across, and commence prolonging the adit to crosscut the Veto-Blanco reef. I have turned the river opposite the bottom of the old tip, and am preparing some sluices to try if I can obtain any gold from this source. I expect a little, as the pyrites have been decomposing through exposure to air and the action of the water. Another point I mean to attack almost immediately is the extremity of the adit, just beyond the engine shaft. By measurement on the surface I find I have only 7 metres to drive to crosscut another reef. I am only waiting for planks and timber, which will be brought over in a few days, as soon as I get the necessary carts and mules. Mr. Yeldham is also endeavouring to hire the wagons to transport the engine; unfortunately wagons and owners are some distance from here. I have commenced clearing the fallen stones from a reef to the west of the main reef. In this reef there is a good deal of pyrites and flookan on the footwall, and has what miners call a kindly appearance. Mr. Yeldham informs me that Mr. Morales, who formerly worked on the northern part of the reef, in the neighbourhood of the Pinero shaft, had expressed his opinion that this portion had not been sufficiently explored, and that the ore bearing portion of the reef had not been cut at the adit. As soon as I can get timber I will re-open the main level to the north and examine this part." You will remember that Mr. Dering has only been a few weeks on the spot, and that he has not at present had an opportunity of giving you any lengthy reports as to the various workings. His intention evidently is to lose no time in prospecting and endeavouring to find out the reefs which, in his opinion, and the opinion of other people, ought to exist there. You will observe that he has already turned the river bed, which means that we may expect, and I trust before long, something very favourable with regard to these sluicing operations. If he is able to carry it into effect, we shall have an immediate source of income from sluicing and alluvial alone. There has been in the district covered by the concession a vast amount of glamour in times gone by, and one reason which led up to the formation of our present small company was that we received in London some time since a letter from a gentleman named Yeldham, who has been in the West Argentine district for years, and looking after the mining interest. I will give you an extract from Mr. Yeldham's letter, as it is from a man who is behind the scenes a great deal there. Writing some few months since he states—"Although I have used every means possible to prohibit access to the mine, having closed the shafts, barricaded the tunnel, and taken out the mining ladders that had been left in the main shaft, still there are a number of ancient workings that it is impossible to close, and as some of these lead to the company's workings the natives by means of lassoes daringly and surreptitiously enter the mine at night time. The fact of the matter is that certain parties in the course of three months have bought gold to the value of more than $10,000—which has been robbed from the company's workings. I state this as a fact which I can prove. I, therefore, calculate that it would not be an over estimate to put down the value of the gold thus robbed at not less than £1000 in a period of three or four months. The fact remains that they have extracted gold from the mine which has given a most material profit, capable of an immediate proof to both themselves and the surrounding storekeepers." Now, if these thieves can go into the mine and steal £1000 worth of gold in the manner stated, it shows that there must be workings known to the natives, and which must have been overlooked by the old company. The probability is that we shall pick up the vein and find where these men have got their gold from. Of course, all this that I have read to you happened before this company was formed, and the letter was received before this company was formed, but it only goes to show that we have good ground for hoping for good results in that region, with a small capital such as ours, three-fifths of which is actually working capital. With Mr Dering on the spot as our engineer, I have not the slightest doubt that a short period will show he is using energetic action to give us good returns for our money out there. I feel sure that the action that Mr. Deering will take will be such as a man of his vast experience can carry out successfully. When once he has unwatered the mine—and that is being rapidly proceeded with—the machinery on the spot will be capable of doing all that is required. I think we may take to ourselves the solace of knowing that before long we shall be in the position of seeing our little venture turn out to be of an exceeding hopeful and favourable character. Many gentlemen, especially members of the old West Argentine Company, have stated to me their opinion that that company did very wrong indeed to drop their valuable property, and should have persevered and spent a little more money to obtain the result of the many thousands which they had laid out in machinery. But I may tell you that the West Argentine has not made an altogether bad bargain. They possess 50,000 fully paid up shares in our company, and will obtain a royalty of 10 per cent. from all gold won. Therefore, they are in an excellent position for benefiting from any rich find that may occur, and nothing will be more gratifying for us than to see that they do benefit from their 50,000 shares. It is a good large holding, and if the property is worth anything, and gold is there to a considerable amount, our shares of 2s. will not long remain at the price of 2s. It must be remembered, too, that the West Argentine Company themselves took out £25,000 worth of gold from the Carolina Mine, which we are working in now. Altogether, I think the position is one which our little company can cheerfully contemplate. So far as the management is concerned, we are working with extreme economy, and our expenses in London are a very small amount, so that practically all the money we raise will be for the benefit of the mine. If, as I sincerely and honestly believe, your company becomes a success, it will be a great pleasure to the directors to meet you at some future time, and hear that you are satisfied with their efforts on your behalf. (Applause.)

Mr. H. D. H. FERGUSSON, J.P., expressed the highest opinion of Mr. Dering, and pointed out that the engagement of a thoroughly competent manager was a matter of the very highest importance. They were, he considered, extremely fortunate in having obtained the services of such a man. He felt sure there was gold on the property, and, if that was so, Mr. Dering was certainly the man who would get it out for them. (Applause.)

The proceedings then terminated.

THE JOE'S REEFS UNITED (SHEBA), LIMITED.

A successful reconstruction.—The position of the company.

The first ordinary (statutory) general meeting of the Joe's Reefs United (Sheba), Limited, was held at Cannon-street Hotel, on Tuesday last, the chair being occupied by Mr. W. J. HARVEY, J.P.

The SECRETARY (Mr. F. W. Sellick) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen, this is the first or statutory meeting of the company, so that there are no accounts to lay before you. The reconstruction, as determined upon, has been most successfully carried through. All the shares available in this country have been over applied for, and the shareholders in South Africa have also responded in heartily approving the scheme of reconstruction. Telegrams have been received even from Matabeleland, showing what those in the country think of the future prospects of their property, to which the lease of Thomas's Mine has been added. I need not go over the ground so fully discussed at the last meeting, and have only to say that at the very earliest possible moment your board wired to the local manager to recommence work at the Joe's Luck reef and also in the development of the Thomas's Mine. I am glad to be able to say that from written advices since received, it appears that these works, together with the cyanide plant for the treatment of our tailings, are being vigorously pushed on. As the tailings have been the subject of many questions I take this opportunity of saying that all the gold won during the few months the old company was able to crush, and which realised between £6000 and £7000, was obtained from the plates alone, so that the tailings from which no concentrates have as yet been extracted may, as anyone cognisant of mining matters will, I am sure, confirm, be expected to yield a substantial return. I am sure you will all join with me in thanking Mr. Henwood, one of the members of the board, for the trouble he took during his late visit to the Transvaal in personally inspecting the company's property, and in securing as favourable a lease of Thomas's Mine as was possible, and I trust that when I have next the pleasure of meeting you that the accounts will show such results as will fully justify former expectations entertained of the mine. (Applause.) There are, as I said, no accounts, but if any of you have any questions to ask I shall be most happy to answer them.

Mr. HILL enquired when the accounts of the old company would be forthcoming, and also how the call of 5s. per share had been expended.

The CHAIRMAN explained that the directors had nothing to do with the accounts of the old company. These were in the hands of the liquidator, who would, in due course, publish his balance sheet. The amount raised by the call of 5s. had been expended in the construction of a tramway, of a water race, and certain machinery, and there was no doubt the company had got the best possible value for their money.

A SHAREHOLDER enquired when work would be recommenced in the Joe's Luck Mine.

The CHAIRMAN said that a letter had been received by the last mail, showing that works of development had already been recommenced upon the Joe's Reef for some time past, and also upon the Thomas's. Results could not be expected at once, and until they got a certain amount of ore in sight it would not be judicious for them to commence milling. The only thing wanted to enable them to work in the past had been money, and now that was in hand, operations would be pushed on as vigorously as possible. Soon they hoped to have news of sufficient importance to be embodied in a circular to the shareholders.

Mr. TAVENOR thought the shareholders might take it as certain that the reconstruction had been successfully completed. Having been connected with Joe's Luck from the commencement, he could say that the property was looked upon by mining engineers who knew it as one with a hopeful and promising future, notwithstanding that the Chairman might be right in saying very little as to that matter. There was no doubt that the reef was a very rich one, and as they went deeper he felt sure they would again pick up with the reef, where it would be as rich, if not richer, than before. He had also heard that the Thomas's was a very rich property, and he could have wished for one of the directors who had visited it to tell the shareholders what he knew. His opinion must, in any case, be a favourable one, otherwise he would not have entered into the arrangements which had been concluded. He thought the board deserved the gratitude of the shareholders for having carried out the reconstruction scheme so successfully. In most cases reconstruction meant that a great portion of the capital had to be underwritten, which was a big item in the balance-sheet. No underwriting was, in this case, entered into. The shareholders were simply appealed to direct, and there could be no greater proof of their confidence in the mine than the manner in which they responded to the invitation. The directors might, therefore, take it as certain that the shareholders reposed the greatest confidence in them and their management. (Applause.)

Mr. HENWOOD (a member of the board) gave some particulars of his recent visit to the property. At the request, he said, of his co-directors, he visited the mine in April last. He left England in January, and on arriving at the Cape he ascertained that it would be desirable for him to go on to Port Elizabeth, in order to confer with the owners of Thomas's Mine or claims, with a view of securing a lease with option of purchase. Arrived there he entered into negotiations with those gentlemen, who took a firm stand and exhibited a great deal of confidence in the value of the property. However, he secured an option for four months to lease the property with option of purchase at a fixed price, and having communicated with the board, he later on visited the mines. Without pretending to any special knowledge in mining—which might, perhaps, have been of little use to him, seeing that neither of the mines had been worked for some considerable time, and that the shafts were full of water—he got all the information possible from disinterested sources in the neighbourhood. He was fortunate enough to get two interviews with one of the late tributors who had worked Thomas's and who had paid 20 per cent. for a tribute with option of purchase, which they had succeeded in getting for 12½ per cent. There were several reasons which prompted him to believe that the company were exceptionally fortunate in getting these terms. In the first place the Thomas's was represented to be a richer mine than Joe's Luck, and had always proved itself to be so. In the next place he was assured that the tributors had left good paying ground in the bottom of the shaft. Then the position of Thomas's in relation to Joe's Luck was a very convenient one, and there was an old tramway which, with a little expense, could be moved from where it was and placed between the two adits, a distance of 1000 yards. About this tramway he could hardly speak in too favourable terms, for it was admitted to be the best aerial tramway in South Africa, and there was hardly any doubt that it would continue to work as successfully as it had done. There was also a new branch of rail shortly to be constructed, which would give the company the advantage of being able to have their supplies brought either from Delagoa Bay to battery-site, or from Barberton to battery-site, and transmitted thence to the mine by aerial tramway. So far as he could judge they might look forward to very favourable results. As to what had been done with the 5s. call raised by the directors of the old company, he could assure the shareholders that it had been spent in the most economical manner possible. A most substantial tramway had been constructed, the water-power machinery had been acquired, and 10 new stamps—altogether 15 stamps—had been set working. Personally, he looked forward to the future of the company with great hopefulness.

The CHAIRMAN explained, in answer to Mr. TAVENOR, that he had refrained from entering into particulars as to the success of the mine from an excess of caution.

The proceedings then terminated with a vote of thanks to the Chairman and directors, proposed by Mr. TAVENOR, who remarked upon the generosity of the board in consenting to forego their fees until the shareholders were receiving dividends.

AUSTRALASIAN GOLD EXTRACTING (POLLOK'S PATENTS) COMPANY, LIMITED.

Call of 2s. 6d. departed from.—Borrowing of £3000 sanctioned.

An extraordinary general meeting of this company was held at Glasgow on Tuesday. Mr. JAMES BELL, the Chairman, presided.

The SECRETARY (Mr. William M'Onie) having read the notice convening the meeting,

The CHAIRMAN explained that the meeting had been called in conformity with the promise given by Mr. Clark to the shareholders at the last ordinary general meeting, when he said—"I may say that before we make another call, or before we even make up our minds to have another call, we shall have a meeting of the shareholders." They were there in accordance with that promise, and to give to the shareholders what information they could. He dared say that many of the shareholders would regard the last clause of the report that had been issued as the most important, as it proposed a call of 2s. 6d. He might say frankly at the beginning that they meant to alter that very materially and to ask a departure from the terms of the clause. They had very great confidence indeed in Mr. O'Gorman, who was now the manager of the mine. Mr. M'Onie was with him for eight months, working with him for eight months, working with him night and day, and everything he could say was in his favour. They had not been able to lay their finger on anything he had foretold or promised that had not come true. He had never yet said distinctly that the mine would be a perfect success; he had never cabled home that success was assured, as they had had cabled in the past, but he had given them to hope that there was in the mine a fair prospect of a profitable working, and he (the Chairman) entirely agreed with him at the present moment. Just now they had expended all their capital, and they were there that day to ask the shareholders to continue for wo or three months more the prospecting of the mine till they saw more clearly what was in it. As they were aware, the company was not originated to be mine owners, but this mine was part and parcel of the plant erected at Ravenswood, and they took the mine as a stand by for ore in case they should not get sufficient for the chlorination works. There was no use going back over old stories and the many cables and letters they got, and how they were—he would not say misled—they thought they were all sent to them with the best intentions—but the anticipations they had, and which they had reason to believe would be realised, had not been realised. Were they acting now with no further information than the information they had before them when they came to the deliberate erection of these works, they could do nothing but what they had done. But looking back with the light of their present experience, he said frankly that they would have been better to let their calls lie in the bank and divide the money with accrued interest, but they had to go on with the information that their experts gave them. They were now in the position that a large amount of money had been spent, and instead of a profitable chlorination work the Pollok Company process had been, at least for the present, laid aside, and they were developing the mine now in the hope of recouping the shareholders money by it. Since Mr. O'Gorman took the mine in hand he had entirely remodelled the works, and all he had done had been to the satisfaction of Mr. M'Onie and of Mr. Bruce, the expert of the board, who was very sanguine indeed that under Mr. O'Gorman's management part, if not all, of their money might be saved. In the last three months the crushings had been as follows:—In June 493 tons, with an apparent loss of £290; in July 411 tons, with an apparent loss of £590 (the batteries then being shut down from lack of fuel); and in August 441 tons, with an apparent loss of only £230. He (the Chairman) did not consider that that £230 was a loss at all. If they were simply shutting down all prospecting, and doing nothing more than taking out the ore that was in sight—and there was a considerable quantity of ore in sight—they could quite easily make ends meet. But they were not there simply to take out the ore and destroy the mine and their prospects for all time in the future; they were there as business men, trying honestly and heartily to face a very bad situation, and along with those whose

money was in the mine with their own, trying to make the best of it. Some time ago Mr. O'Gorman thought that it would be necessary to sink another shaft to develop the whole property and crush the various lodes of ore. He now told them that, at the moment, he did not think that was quite necessary, and it was this letter that had caused the directors, after the circular was in print, to depart from their intention of asking the shareholders to authorise them to sink a new shaft, and to ask the shareholders instead, to allow them—although they had the power they did not wish to exercise it without the shareholders' consent—to borrow a sum of £3000. Possibly £1000 or £1500 of that might be spent within the next three months, but before any more than half of it could be spent the annual meeting of the company would be held, and the shareholders would then know how much more of the mine had been developed, and how much more ore was in it. At the present moment a few pennyweights more gold would turn the mine from an apparent loss to a distinct profit; even more, if they were putting down at an expense of £1000 additional concentrators, with the stamping powers they had, they could turn it from a loss to a profit. But, then, they had been so often told that they were so near success, and so much money had been spent, that they feared to risk another penny until they saw that success more assured. They therefore asked for two or three months longer to allow Mr. O'Gorman to open up the mine and show what body of ore it contains. If he could show a large supply of ore, and the probability or the possibility of the continuance of a large supply, they would then give him additional concentrators, and with the stamps he had, and with the figures they had, they could turn the present apparent loss into a substantial profit. That was the position; it was not a pleasant position to stand in when they had regard to the past losses of the company, but, as he had said, he did not think that the directors could have done differently, in the circumstances in which they had been placed. They acknowledged that the process had not come up to their expectations, nor had any of the happy auguries that they had from Australia been realised, but they thought they had got a good man just now. He had done good work since he went there, and it was only fair play to a good man to give him a fair chance. Had they spent the money in developing the mine instead of erecting chlorination works they would have been earning a dividend instead of having a loss. In making the proposal that they depart from the call of 2s. 6d. and authorise the borrowing of £3000, he was recommending what was best in the interests of the company.

Mr. MALCOLM C. THOMSON seconded the motion, which was carried unanimously.

The proceedings terminated with a vote of thanks to the Chairman.

BANK OF AFRICA, LIMITED.

A bright view of the future.—Dividend of 8 per cent.—Bonus of 1 per cent.

The 26th ordinary general meeting of the shareholders in the Bank of Africa (Limited) was held on Wednesday, at the Cannon-street Hotel, Mr. WILLIAM YOUNG presiding.

Mr. R. G. DAVIS (the secretary) having read the notice convening the meeting,

The CHAIRMAN, referring to the balance sheet, stated that the items of "deposits and current and other liabilities" (£1,902,171) was less in the previous half year by nearly £130,000. This was owing to the Australian crisis, which had affected them indirectly by causing deposits on this side to be withdrawn. He might, however, state that within the last few months these deposits had been returning. The cash in hand showed an increase of £21,000, which was no material difference. The item of "loans on security, temporary advances, &c.," showed a decrease of £158,000, owing mainly to the difficulty of employing money safely and profitably; and they were obliged to be, and were, very careful in the selection of their business. In the Cape Colony trade at most of the points where the bank was established had been inactive, the low value of money in England having had its effect upon the margins of exchange. In the Orange Free State business was in a depressed condition in the period under review, but since June 30 there had been clear indications of a revival of trade. In the Transvaal business had been fairly good, and would have been eminently good, so far as the bank was concerned, but for the robbery in the previous half-year. South Africa of late seemed to be the "happy hunting ground" of many of the most skilled thieves in the world. He thought that the respective Governments should employ more stringent means than they did at present to protect the producers of gold and precious stones, who so largely represented the prosperity of the country. Another robbery had occurred quite recently, the Standard Bank being the sufferers. Ten packets of gold, received by that bank at Lydenburg, were forwarded from Pretoria to Johannesburg, and disappeared *en route*. With respect to Natal the accounts were encouraging. The sugar industry continued to prosper, and the crop for the year was estimated at 18,000 tons. The output of coal was also increasing. The outlook generally for Natal was a bright one, but much depended on the hoped-for benefits to be derived from the promised further railway facilities. Their general manager remarked that a surprising feature throughout South Africa was the fact that the price of town and village, as well as farm, property was well maintained, in spite of the depression among farmers and those connected with them. The output of gold in the Transvaal had very largely increased. The figures for the first eight months of the present year were 1,316,666 ounces, and should this rate continue for the remaining four months the total output would be nearly 2,000,000 ounces, or an increase of about 500,000 ounces on the output for 1893. The diamond industry, too, was developing in a way that was familiar to them all. As Mr. Blaine had said at the last meeting, taking South Africa as a whole, the facts and statistics before them, encouraging in themselves, were doubly encouraging as showing immense potential vitality and energy, and they were justified in taking a bright view of the future. He concluded by proposing the adoption of the report and the payment of a dividend at the rate of 8 per cent. per annum, and of a bonus of 1 per cent. for the half-year. Mr. August Barsdorf seconded the motion, which was unanimously carried.

A vote of thanks to the board concluded the proceedings.

WILSON'S AND CLYDE COAL COMPANY.—An extraordinary general meeting of this company was held on Monday, at Glasgow, Mr. John Wilson (Chairman) presiding.—The proceedings were conducted in private. The chief business of the meeting was to complete the arrangements for securing a lease of the coal in the estate of Glencraig, near Lochgelly, Fifeshire, and to raise capital for working the same. There was a full attendance of directors. The following resolutions were put from the chair, and unanimously adopted:—(1) That the minute of agreement entered into between John Wilson, of Glencraig, residing at Craigmount, Kelvinside, Glasgow, of the first part, and the said company, of the second part, now submitted to the meeting, be and is hereby sanctioned, adopted, and confirmed; and that the board of directors be instructed to carry out the said agreement, and to take such steps as they deem expedient for that object upon the resolution after specified being confirmed as a special resolution of the company. (2) That the capital of the company be and is hereby increased by the sum of £60,000; and for that end there be and are hereby created 20,000 new or additional ordinary shares of the company; that the ordinary shares of £3 now created shall be issued *pro rata* to the shareholders at par, according to the number of shares held by them, with equal right to participate in the dividend according to the amount called up from time to time along with the existing ordinary shares of the company from the date of the last balance thereof (August 31, 1894), and on such other conditions as the directors may hereafter determine." This second resolution will be submitted for confirmation to a general meeting of the company which will now be convened.

BABCOCK AND WILCOX, LIMITED.

A highly successful record.—Dividends fully maintained.

The third ordinary general meeting of Babcock and Wilcox (Limited) was held on Tuesday, at the Cannon-street Hotel, the chair being occupied by Mr. ANDREW STEWART.

The SECRETARY (Mr. Walter Shaw) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen, having all had a copy of the report and balance-sheet, and time to consider it, I presume we may hold it as read. I hope that your reading of it has been attended with comforting and agreeable reflections. Though trade and manufacturing concerns have been in a bad condition during the past year, in consequence of decreased business and lower prices, balance sheets, especially those of limited companies, have, as a rule, been unsatisfactory. We have been able to keep up and extend our productions, reduce our costs, and place in your hands a balance-sheet equal to any which we have had the pleasure of issuing in the past. We have paid to the shareholders for the half year ending December 31st last an interim dividend of 10 per cent. on ordinary shares, and 6 per cent. on preference shares, which absorbed £10,000. We now propose to pay 15 per cent. on the ordinary shares, and 6 per cent. on the preference shares, which will absorb £13,500, the total dividend payable for the whole year being £23,500. In addition, we propose to write off the sum of £14,058 11s. 1d. for purchase of business, plant and patents account, and to carry to the credit of next year the sum of £9137 18s. 2d. I am glad to say that the year's business, as before recorded, is in a large measure from existing customers at home and abroad. The works are being kept up in the most efficient condition to enable us to produce with greater economy, and at the same time of the highest quality. The mechanical and administrative staff of the company is of the best and most effective character, and directed and controlled as it has been by the able managing directors of the company, we have as a result the gratifying balance-sheet and report now in your hands. The new offices which the company purchased in Queen Victoria-street have been of great use and importance to us in the conduct of the business. In conclusion, gentlemen, the directors will do their best to make the progress of the company as successful as it has been in the past. (Applause.) I now beg to move that the report and accounts for the year ending June 30, 1894, as submitted to this meeting, be hereby received and adopted.

Sir WILLIAM ARROL seconded the motion, which was carried unanimously.

The CHAIRMAN then moved:—

> That a dividend for half year ended 30th June, 1894, be paid on the Preference share at the rate of 6 per cent. per annum (under deduction of income tax); that a dividend for the same period be paid on the ordinary shares at the rate of 15 per cent. per annum (free of income tax); these dividends to be payable on and after the 20th September to the shareholders whose names are on the register on the 18th September.

Mr. J. H. ROSENTHAL seconded the motion, which was carried unanimously.

On the motion of the CHAIRMAN, the retiring directors—Sir William Arrol and J. G. M. Rumley—were unanimously re-elected.

The auditors—Messrs. Cooper Brothers and Co.—were reappointed.

The proceedings terminated with a hearty vote of thanks to the Chairman, proposed by Mr. WILSON, who pointed to the meagreness of the attendance as evidence of the confidence reposed by the shareholders in the management.

CALDERBANK STEEL AND COAL COMPANY (LIMITED).—The fourth annual general meeting of this company was held at Glasgow on Wednesday. Mr. William Donaldson, the Chairman, who presided, said: The directors were sorry that they were not in a position to declare a dividend. They thought, however, that the shareholders would recognise the fact that this had been caused by circumstances outside of their control. The condition of the steel trade had been such as to render is impossible to start the mills without running them at a loss. The directors were, however, watching very closely the condition of trade, and whenever they could see their way to start the mills and run them even level they were prepared to do so, in order that when the revival of trade, for which they were all anxiously looking, came, the mills might be in good working order. In regard to the collieries, he thought that, on the whole, the outlook was cheerful. The unfortunate strike which had prevailed for three months, so far as they were concerned, was now practically ended. The pits were fully manned, and the directors hoped that early next week they would be throwing the full quantity of coal. They were not hampered with any future contracts; they had practically a clean book. Therefore it was hoped that the remaining nine months of the financial year would show a good record. Coal had been got in No. 3 pit. The thickness of all the three seams was fully what was expected. It would take some time to develop the pit, and probably much coal would not be drawn until the beginning of the year. When the pit was in full working order the output would be about 400 tons per day. An expert, who was conversant with the Lanarkshire coal fields, had been consulted, and he had recommended the expenditure of some money to develop Nos. 1 and 2 pits, in order to increase the output from 500 to about 800 tons per day. It was hoped that the development of these pits would be begun very soon. When this was done the result would be that at a very early date the total output would reach 1200 tons per day, instead of 500 or 600 tons as at present. The directors were giving their anxious care and attention to every point connected with the property, and he thought that, granted favourable conditions, in a very short time the company would be a dividend-paying concern again. Replying to a question by a shareholder, the Chairman said that in the event of a renewal of trade taking place No. 1 steel mill, producing 700 tons, could be started without any extra expenses being incurred. To start the large mill, No. 2, however, some expenditure would be required. Before beginning on No. 2 the directors thought that the wisest course was to see No. 1 in operation and working satisfactorily.—The report was adopted.

MOSMAN GOLD MINING COMPANY (LIMITED).—An extraordinary general meeting of the Mosman Gold Mining Company (Limited) was held on Thursday at the Cannon-street Hotel, when, upon the motion of the Chairman (Mr. George Hopkins, C.E.), seconded by Mr. Mosman, the resolutions reconstructing the company, passed at a previous meeting, were unanimously confirmed. A further resolution was, upon the motion of the Chairman, passed, fixing the remuneration of Mr. Thomas Winder, the liquidator, at £105.

THE CORNISH ROCK DRILL.—It is very gratifying in these days of keen competition that as successful engineers and rock drill manufacturers, Cornishmen can still "hold their own." During the recent visit of the South Wales Society of Engineers to Camborne, Mr. Thomas Foster Brown, the well-known mining authority, in a speech at Dolcoath, referred to their visit to Messrs. Holman Bros., Engineering and Rock Drill Works. After complimenting the firm on their well laid out plant, he spoke of the Cornish rock drill—their speciality. He had seen many boring machines, but he had never seen one do such good work as the Cornish drill had done that morning. The speed obtained, viz.—12 inches in less than a minute in a block of hard granite—was really remarkable; he confessed in all his experience he had never seen anything like it before. He congratulated the Messrs. Holman on their drill.

THE *Natal Witness's* Vryheid correspondent writes:—"A new reef has been struck by Mr. Elijah Hazelhurst, extending from the Farm Nineveh, already belonging to him, into the Farm Prospect, on the Zululand side of the D.-D. fields, and across the Umhlatuzi River. The stuff is banket, and runs 6 feet to 8 feet in width. From panningg a yield of from 15 dwts. to 1 ounce has been obtained, and the prospects are said to be very good. This discovery has created quite a flutter, and speculators are on the alert."

MINING PROSPECTS IN WESTERN AUSTRALIA.

INTERVIEW WITH MR. W. J. BEGELHOLE, M.E., FIRST MANAGER OF BAYLEY'S REWARD.

WE have this week had the opportunity of an interesting chat with Mr. W. J. Begelhole, first manager of Bayley's Reward Mine, who has lately come from Coolgardie. This gentleman is a mining engineer of long and much practical experience in the Australian, Indian, and other gold fields. He is about 50 years of age, vigorous and active, and commenced his career in gold mining as a young lad under his father in the year 1851 on Bendigo, Victoria. His father had the first 12-head battery of stamps erected on the Bendigo gold field in 1858, which was started by the then Warden of the gold field, Mr. J. A. Panton, now the Police Magistrate of Melbourne

Mr. Begelhole belongs to a well-known mining family in Cornwall. His father emigrated to South Australia, with his family, in 1846, and was one of the managers of the Burra Burra Copper Mine, under a five years' engagement. On the breaking out of the Victorian gold fields, he and his family migrated overland to Bendigo, taking with him a load of flour from Adelaide, which he was able to retail out to the diggers at enormous prices.

Mr. Begelhole, having passed through the various phases of practical gold mining, soon became an experienced mining manager and engineer. In 1866 he received his first appointment as mining manager, under Mr. Ballestedt, a well-known mine-owner in Bendigo. He attended the School of Mines at Bendigo, and passed successfully in practical engineering and assaying, and gained first-class certificates in the various departments. He has since held lucrative appointments as mining manager in Victoria, New South Wales, South Australia, and Queensland, and from 1889 to 1892 held commissions in India, in Central Bengal, and visited the Mysore Mines, of which he holds a very favourable opinion.

On his return from India to Melbourne in October, 1892, he made arrangements with the proprietors of the Bayley's Reward Mine to go to Coolgardie to undertake the development and management of the mine. He arrived on the mine in February, 1893, and resigned his position in April, 1894, and during that time sunk several shafts, the deepest being 240 feet, and three others not less than 100 feet each.

From February 28 to March 17, 1893, Mr. Begelhole and four of the shareholders dollied out 2650 ounces of gold from 4 cwts. of stone; prior to this Messrs. Bayley and Ford, the prospectors and discoverers, had got from within 1 foot of the surface 2500 ounces. The history of the discovery of the gold outcropping from the surface or blow of quartz by Messrs. Bayley and Ford, as related to us by Mr. Begelhole, is in itself a piece of romance that, if the facts were placed in the hands of a clever playwright, would make an interesting drama. But, however romantic the scene of the discovery may have been to the only parties then interested, with no audience to applaud the actors, the absolute results of this remarkable and romantic find have been of the most solid character, and will do much towards advancing the prosperity of the shareholders of the mine and the population of Western Australia. That and other similar rich discoveries in this Cinderella of the Colonies has already caused the tide of emigration of gold miners and others to set in to that colony, which is likely to continue for a long time to come.

During Mr. Begelhole's period of management of Bayley's Reward Mine, from February 28, 1893, to March 18, 1894, it produced 23,000 ounces of gold, and paid to shareholders £80,000 in dividends; the whole of this gold was got by dolly-ing, and without the aid of any machinery. Prior to leaving the mine, Mr. Begelhole had erected and started a 10 head battery, and laid the foundations for another 10 head of stamps. Since then the company has paid four dividends of £8000 each, on 480,000 shares, on which the company is now constituted. At 260 feet the lode is 7 feet wide, showing good gold as near the surface, and the mine is likely, so he is assured, to long continue its profitable career.

Outside of Coolgardie there have been many other valuable discoveries, some even transcending Bayley's Reward, such as the Londonderry, Wealth of Nations, and others. Mr. Begelhole, having visited most of the chief gold fields of the world, is of opinion that no other country has the same extent of rich auriferous land as that possessed by Western Australia. From Pilbarra in the north to Dundas in the south, there is a vast extent of auriferous country. Between these two points wonderful discoveries have been made, and he is satisfied that many others of a similar character will also be made, and that Western Australia will prove to be the greatest and richest gold field of the world. To verify his predictions, he says, it is now only a question of capital, machinery, and labour to make Western Australia the leading gold producing country. He is also impressed with the belief that from the vast extent of auriferous country now prospected at various points, and the enormous area yet to be explored by enterprising prospectors, it opens up such a field for profitable labour that nothing like it has yet hitherto been revealed.

Although in the unexplored regions of Australia the want of water has been the great difficulty to contend against—so also is it in and around Coolgardie and other fields lately opened—Mr. Begelhole considers this drawback can be gradually surmounted. The Government and private parties are taking steps to conserve water at many places. It is also proved by many shafts sunk on different parts of the fields that water suitable for milling purposes can be obtained by sinking to a depth of about 200 feet, and should there not be a sufficiency to supply all requirements from conservation on the surface, or by bores or sinking, the Coolgardie and other fields adjacent can obtain a fair supply from the lake at the foot of Mount Burgess, which, although brackish, will answer for ore crushing, and condensers can be used for the domestic supply.

Timber in and around Coolgardie is in abundance, he says, which gives a superior advantage over the Murchison district in that particular, and will enable mining operations to be carried on with economy as regards the timber supply.

The Kurnalpi gold field, about 90 miles north-east of Coolgardie, is, Mr. Begelhole thinks, a place of great promise, and will develop immense wealth. He is also of opinion that the areas of ground for claims should be enlarged, and that companies should be able to hold claims of from 20 to 50 acres. Mr. Begelhole possesses much valuable information about the gold resources of Western Australia and other parts of the world; he is of an observant disposition, and holds numerous testimonials of a very high character. His presence in London will, no doubt, be taken advantage of by many who require information of the value and prospects of some of the numerous ventures now being offered on the English market.

COMPANY FINANCE.

Reports, Balance Sheets, Dividends, &c., of Mining and other Companies.

The Sunlight Gold Mining Company

THE directors' report for the half-year ending June 30, submitted to the shareholders at the 11th half-yearly meeting held at the registered office of the company, 63, Pitt-street, Sydney, on the 31st day of July, was as follows:—Full work was resumed at the mine in the beginning of the year, and 8237 tons (from Nos. 2, 3, and 4 levels, Sunlight lode exclusively) have been crushed for a yield of 3386 ounces 15 dwts. smelted gold, value £11,875 1s. 11d., showing an average yield of 8 dwts. 5 grains per ton—value £1 8s. 10d. The cost of this, has been £1 1s. 11d. per ton, so far as the local expenditure is concerned. Depreciation on machinery, and renewals and repairs (together amounting to about 10 per cent. per annum on the value of the plant), add a further 1s. 2½d. per ton to this, equals £1 3s. 1½d. total cost. 1s. 7½d. of this amount is applicable to development work, of which no use has yet been made for stone-getting, but which establishes reserves for time to come—viz., to 200 feet depth underlying No. 4 level, and, on the new reefs to the south-west, from 180 to 250 feet height of backs over No. 1 level. Sufficient stone, ready for breaking down, remains in the Sunlight lode alone, from No. 4 level upwards, to serve for almost the whole of the ensuing half-year. Attention has been given throughout the last three months to the loss in tailings, these having been sampled every two hours, the results (which appear in the crushing statement appended) showing an average loss of 10 dwts. 4 grains per ton, of which 1 dwt. 4 grains only is free gold, the remainder being non-amalgable. As an antimony ore is being dealt with, the smallness of the loss in free gold must be regarded as satisfactory. To solve at once the practicability of recovering the remaining 9 dwts. profitably, a concentrating plant, applicable to 10 head of the battery, is being erected. This consists of a Duncan concentrator, 4 Frue vanners, settling vats, and one or more vanners to treat the slimes therefrom, and has been adapted from the system successfully worked at the South German Gold Mining Company, Maldon, Victoria, on an equally pyritous ore. Should the results from this trial prove satisfactory, the concentrating plant will be extended to the full capacity of the battery (40 head). The water supply has been improved by a shaft and drive at the battery site, for catchment underneath the old creek bed, from which a full supply for boilers and concentrators may be relied on. The one-acre allotment immediately below the company's machine site on the creek has been acquired, with all buildings thereon, for a small sum, and will be made serviceable for extension of plant, and arrestment of tailings if necessary. The abolition of Crown royalty of 2s. per ounces, anticipated in our last reported has taken place (by passage of "The Mining on Private Lands Act") just as the half-year closed, and this, with the 1s. per ounce concession from freeholders, and the company's one-sixth share of the 4s. per ounce receivable by freeholders, has brought the royalty, formerly 7s. per standard ounce of gold, down to 3s. 4d. per ounce. The tram line from Tableland to battery, formerly in two sections, has been connected, now affording unbroken communication from top to bottom, with a considerable saving of labour. The whole plant has been thoroughly overhauled and improved during the half-year, particulars of which are indicated in the general manager's report. Though the working cost has been considerably lowered, as accounts show, the directors are not satisfied that the amount is commensurate with the natural facilities of the mine, the output made by the number of hands employed being less regular and ample than should be given. After considerable thought a scheme of payment by tonnage, with a bonus for results, has been devised, which, the directors think, will, while resulting in higher earnings to the men, ensure an increased output and yield, and accordingly higher profits to the company. This scheme is now before the men for acceptance, and the directors are determined that on this or such system the work must in future be carried on.

The African Gold Recovery Company.

The following is the report of the directors to be submitted to the shareholders at the ordinary general meeting:—Your directors submit accounts for the year ended June 30 last, showing a balance to the credit of profit and loss of £57,654 12s. 6d., which, together with the sum of £913 13s. 4d., brought forward from last year, makes a total of £58,568 5s. 10d. Of that amount £30,000 has been passed to the reserve account, bringing this up to £60,000. The board recommends the payment of a dividend of 10 per cent., free of Income-tax, on October 23, 1894, to all shareholders on the register on October 8 next, carrying forward £11,068 5s. 10d. During the year several large parcels of tailings have been purchased for treatment. This has entailed considerable cash outlays, particularly in the erection of plants. These outlays for plants fall to be redeemed during the progress of treatment of tailings, and for this your directors have made suitable provision. Various promising mining interests have been secured, from which your directors anticipate favourable results. The use of the MacArthur-Forrest process has continued to extend, and is now recognised as an essential part of outfit of all well-conducted mines. The total Randt output for the year ended June 30, 1894, apart from the process, was 1,296,000 ounces. By the process this was increased by 491,000 ounces, making a total of 1,787,000 ounces. From districts not included in the Randt a further recovery of 62,300 ounces was returned, making in all 553,400 ounces due to the working of the process.

New Louis d'Or (Main Reef) Gold Mining Company.

The directors have issued a circular to the shareholders, giving the latest information received from the manager regarding operations at the mines. The directors say:—"The mines are on the farm Doornfontein, within 4 miles of the town of Johannesburg, on the main reef upon which, amongst others, are the City and Suburban, Meyer and Charlton, Wolhuter, Heriot, Henry Nourse, Jubilee, Geldenhuis, Langlaagte, Croesus, Stanhope, New Primrose, Salisbury, and Jumpers companies, all of which, with the exception of two, are making large profits and paying dividends. The main reef on this company's mines has been struck at a depth of about 160 feet, about 3 feet thick, and gives from 1 ounce to 25 dwts. of gold to the ton. The new manager has discovered other important reefs on the property, notably the Jumpers, but, in order to obtain early and profitable returns, his instructions are to first push on the development upon the main reef. The shareholders are aware that the directors made arrangements through the Exploration Company, by which the Rand Mines (Limited) acquired an interest in the company's water right for a cash payment, and an undertaking to supply free to your company in perpetuity sufficient water for 40 heads of stamps, and also a further supply, if required, for additional heads of stamps, pumping charges only to be paid. This arrangement the directors consider of the greatest importance to the company, as it will save them a cash expenditure for the construction of dams, pumping machinery, &c., estimated by the engineers at about £6000, which will therefore be available for the development of the property. Until the manager has selected a battery site, he has arranged to have the quartz raised and crushed at a neighbouring battery. The recent advices from the mines are of a most encouraging character, and show that the property is being energeticaliy and prudently developed and that the sinking on the main reef is being vigorously proceeded with. Houses for miners are erected, and everything is progressing to the satisfaction of the board. The last cable of importance, announcing the discovery of the Jumpers Reef upon the company's property, has been duly communicated to you. The shareholders will be advised when further particulars as to this discovery are received by mail."

Harquahala Gold Mining Company.

The directors have issued their first annual report and accounts for the period from June 12, 1893, to June 30, 1894. The revenue account shows a credit balance of £31,682 13s. 2d. as the result of active milling operations during a little more than eight months' working. From this sum two dividends have been paid of 9d. and 6d. per share respectively, and since the closing of the accounts a further dividend of 9d. per share, making a total distribution for the year of £29,000, or 2s. per share, being at the rate of 10 per cent. per annum on the capital. All initial legal expenses, together with Captain Plummer's fee for inspecting and reporting upon the property, have been defrayed out of revenue; the commission due to the American Company under the working agreement has been provided for, and the board have set aside £1000 for depreciation and renewal of plant and machinery, leaving a balance of £776 13s. 6d. to be carried to the next account. The expenditure upon capital account has been £7922, and the balance of capital unexpended, including the amount retained under agreement with the American Company, is £13,436. The cost of the new shaft, £1533 19s. 9d., has been charged to capital account. It became necessary, owing to the dangerous condition of the old shaft, to suspend milling operations for three months, pending the completion of the new shaft. This stoppage, and the accident to the boiler in July, account for the period of nearly four months during which no milling was done. Development work has been continuously and vigorously prosecuted, but with results, as regards the Bonanza group, so far disappointing, the size and value of the veins apparently diminishing with the depth reached, and the drifts into the adjoining ground showing little or no value. At the Golden Eagle group developments have resulted more satisfactorily. Mr. Allen, the manager, estimates the reserves of ore at 30,000 tons, but explains that the irregularities of the vein system make it difficult to arrive at conclusions in the matter with accuracy, and the figure named is, therefore, probably a moderate one. The question of the treatment of tailings has engaged attention, and the board await the results of experiments made with the Kendall process before deciding upon the steps to be taken.

The Gold Fields of Tierra del Fuego.

The following has been officially communicated to us:—Mr. Parsonson, the company's representative in Mozambique, communicates the following news from which it is evident that important mining operations are being carried on in the Mozambique territory with far greater energy than is supposed.—The Sarmbi. This property is situated on the Sarmbi River, a main tributary of the Umtali River. It consists of 10 claims on the line of extension of the Rezende formation. On claim No. 5 a 45 feet shaft has been sunk through a chloritic slate, and the reef cut at the bottom 3 feet wide dipping vertical. Pannings are obtained from the reef from 1 to 2 ounces and visible gold may be seen. On claim No. 8 another reef has been located and a 30 feet shaft sunk. This reef is 18 inches wide and carries good gold.—The Revue Syndicate. We understand that work is about to be recommenced on the Syndicate's ground. —Greenside Penhalonga. On this property Mr. Pattison intends to sink other shafts. The reef has already been struck, and looks well.—The Penhalonga (adjoining the Palmyra): Mr. Barry is 30 feet already in the 100 feet shaft that is to be put down on this property. Mr. Chase is 21 feet in his shaft on this same line.—The Mermaid: On this property the footwall of the reef has been reached, and will shortly be gone through. The owner, Mr. Hughes, intends further developing this property by putting a drive in from the south, proving a second reef, which has been located.—The Penhalonga: Mr. Sargent, of Messrs. Alford and Company, and Mr. H. J. Pickett, have left town to complete the survey of this property.—The Perseverance Syndicate: Work is still being carried on under the supervision of Mr. Oliver Harris.—The Central (Messrs. Douglas and Smith): Work has been recommenced on this property.—The Great Eastern: Mr. Levitt is about to sink on this reef. The property lies between the Gas Check and the Countess claims. The Enterprise has been located one mile to the south of the Suburban Blocks. — Extension of Suburban Reef: Messrs. Hughes and Wright are about to start work on this line.—Maggie Reef: One of the series of reefs in the ground of the Mount Maggie Syndicate has just been struck, but no details are yet known.—The Constance Reef: Mr. Taylor has discovered another reef on this ground, making, in all, seven. The last reef discovered carries visible gold pretty freely.—The Hillandale Reef: Some very rich specimens have been brought in from this reef. From this reef over 30 ounces of gold were won by a battery from 30 tons of quartz.—The conglomerate: Sinking is going on, and good results are expected.

Frontino and Bolivia Gold Mining Company.

The directors have received advices from the mines, dated July 24 and August 7, also a letter from Messrs. Restrepo, dated July 12. The statement for the month of July is as follows:—3241 tons produced bar gold 2428 ounces, tributers' gold produced bar gold 184 ounces, total 2612 ounces, also 54,740 lbs. of sulphurets, valued at £886 18s. 2d. Estimated value of the gold and sulphurets £7298 3s. 8d., cost at the mines, Medellin, and in London £5680 2s. 2d., estimated excess of returns £1618 1s. 6d.

The South Australian Petroleum Fields.

We are officially informed that the directors are, at the request of their manager, sending another driller to assist at the property, further assistance being required owing to the extent of the developments that are now being carried out on the property. The manager reports that he has struck further wells, and that the borings have been successful. He is now on a visit to another portion of the property, situate at Burangah, where he hopes to find everything is being pushed forward rapidly. The assistant manager reports that everything is going on well at Minbyn, the headquarters of the staff. A cablegram from the manager is expected, reporting the success of his visit. The material requested by the manager have been duly despatched by the British India steamer *Dunera* to Akyab, care of Messrs. Mackinnon and Mackenzie, agents.

— The report of the directors of the PEARSON AND KNOWLES COAL AND IRON COMPANY (LIMITED), for the year ending June 30, shows the profits for the year amount to £13,485, and the balance brought forward from last year £5423, making together £18,909. The directors recommend that the preference dividend at the rate of 6 per cent. per annum be paid on the A shares for the half-year ending December 31, 1893, but the present state of the accounts does not, in their opinion, warrant any further distribution. The directors also recommend that £500 be added to the depreciation fund, and that the balance, £7582, be carried forward to the next account. The capital outlay during the year at the Ince Collieries and the new colliery at Coppull has absorbed £11,108. The new pits at both places are in a condition for the efficient working of the coal for the coming winter season, and it is anticipated that the additional output from both sources will within the next month amount to from 500 to 600 tons a day. The colliers' strike, which extended over one-third of the whole financial year, has most seriously affected the company's business in all departments, and, as a consequence, very heavy losses have had to be made good. In addition to this, the state of the iron trade has throughout the year been exceedingly depressed and unsatisfactory, and at present no improvement is perceptible.

— The directors of the BANKET GOLD MINING COMPANY have entered into an agreement with Mr. T. Falck, granting him the option of reconstructing the company, and the matter has just been submitted to a meeting of shareholders at Johannesburg for their approval. If the option is exercised the new capital will be £120,000, in £1 shares, of which 20,000 will be issued to present shareholders. One new share is exchanged for every 10 old shares held.

— In accordance with a cablegram received from the head office of the NEW JAGERSFONTEIN MINING AND EXPLORATION COMPANY (LIMITED) the transfer books will be closed from the 26th to the 29th inst. for the purpose of preparing the list for a dividend, which will be declared by the board of directors at Kimberley on the 25th inst.

— The directors of the SHEBA GOLD MINING COMPANY notify a final dividend for the financial year ending 30th inst. of 1s. per share, free of income tax, payable on October 8.

— The MORGAN CRUCIBLE COMPANY (LIMITED) announce that the transfer books will be closed from September 24 to September 30 inclusive, for the preparation of dividend warrants.

— Shareholders in the MASHONALAND AGENCY, LIMITED (in liquidation), can now exchange the certificates for the shares which they hold in this company for certificates for shares in the new company to which they are entitled. Applications should be made at the offices of the company, 8, Old Jewry, E.C.

— The SAN JORGE NITRATE COMPANY (LIMITED) has declared an interim dividend of 7½ per cent. (7s. 6d. per share), tax free, for the half-year ending June 30, payable on October 20.

— BAYLEY'S REWARD CLAIM GOLD MINING COMPANY (LIMITED) announces a dividend of 4d. per share, payable on the 29th inst.

— NEW SPES BONA GOLD MINING COMPANY.—We are officially informed that on confirmation by shareholders at the meeting to be held on Thursday, September 27, of the resolutions as to liquidation and reconstruction, passed at the meeting held on 12th inst., the transfer books of this company will be closed.

— NEW HERIOT GOLD MINING COMPANY have declared a dividend of 20 per cent. to all shareholders registered on the 28th September, 1894. European shareholders may expect to receive the warrants for their dividend seven or eight weeks after that date.

— A cable dated 17th September states that the NIGEL GOLD MINING COMPANY have declared a dividend of 15 per cent. to all shareholders registered on the 29th September. European shareholders may expect to receive their warrants about seven or eight weeks after that date.

— The MOZAMBIQUE COMPANY announce that their revenue for the month of April, 1894, derived from customs, land concessions, licenses, and other miscellaneous sources, amounted to £3770 12s. 9d.

— The RIO TINTO COMPANY (LIMITED) announces the payment of the drawn bonds of its 5 per cent. issue of 1880, and coupons on its 5 per cent. issues of 1880, 1884, and 1892, due 1st prox. Holders are invited to present coupons and drawn bonds at once.

— The annual report of the AMERICAN IRON AND STEEL ASSOCIATION states that the iron ore raised in 1893 amounted only to 11,587,629 tons, against 16,296,668 tons in the previous year, the quantity obtained from the Lake Superior mines being 6,060,000, against 9,069,000 tons. In the production of pig iron there was a falling off from 9,157,000 to 7,124,000 tons, while in the manufacture of rails the decrease was from 1,551,844 to 1,135,488 tons.

— The accounts of FRANK JOHNSON AND CO. (LIMITED) for the year to December 31, 1893, show a net profit of £22,216, which reduces the debit balance carried forward to £54,471. The company is interested in 1803 claims in Mashonaland, and has 60,000 Mashonaland Ceutral shares, 13,200 Beira Landing, Forwarding and Shipping shares, 2000 Gold Fields of Mashonaland shares, and 2835 Beira Railway debentures. The company has borrowed £20,000 at 8 per cent. interest from the Consolidated Gold Fields of South Africa. The directors are issuing £30,000 in Eight per Cent. Debentures, of which £20,000 will be issued to the Gold Fields Company in exchange for its loan, and the remaining £10,000 will be used in the development of the company's properties.

THE PRIESKA (CAPE COLONY) SALTPETRE DEPOSITS.—The deposits of nitrate of potash (saltpetre) in the district of Prieska, in the Cape Colony, promise to be the most valuable ever discovered. They are true potassium nitrate, which is worth £16 16s. per ton in London, and is one of the chief ingredients in the manufacture of all gunpowders. At present the principal supply is derived from the sodium nitrates of Chili (Chili saltpetre), which have to undergo a costly chemical process before their sodium contents are altered into nitrates, because sodium, by reason of its great affinity for moisture, renders it unavailable for the direct manufacture of gunpowder, as the product becomes useless whenever it is exposed to any damp. Hitherto nitrate of potash has been found in many parts of the world, but only in small percentages, as the mineral being readily soluble in water, the rain washes the product out of the soil. To its intermittent and slight rainfall is due, no doubt, the richness of the nitrates in the Prieska district, where the yield of the mineral is calculated at 25 per cent. for the whole area of supply. In India and Ceylon the percentage worked at a profit varies from 2½ to 8 per cent. at the highest, while in Hungary nitriferous soils yielding ½ to 2½ per cent. pay well. It is calculated that nitrate of potassium worth fully £16 10s. per ton, from the Prieska district, can easily be put down in London at £8 per ton. And the demand for this chemical is practically unlimited. All that is required is a simple hot or cold decantation of the clear liquor from the soil into shallow pans and evaporation by the sun, when practically pure nitrate of potash crystallises out. The next South African product to which educated explorers will give their attention will be, we hope, says the *Zoutpansberg Review*, hydraulic lime for the manufacture of cement, &c. The discoverer of a bed of this, and there is every reason to expect it in the Transvaal High veld, need not envy the owner of any gold or diamond mine

THE EDITOR'S LETTER BOX.

**** We wish it to be understood that we do not hold ourselves responsible for, and do not necessarily endorse, the opinions of correspondents. All communications must be accompanied by the names and addresses of the senders though these need not necessarily be published.*

MODERN CONCENTRATING MILLS.

TO THE EDITOR OF "THE MINING JOURNAL."

SIR,—In your interesting leader under the above heading, in the Journal of August 11th, I notice that you strongly approve of the terrace form of mill site, with "the mill itself placed upon a hill side in order that the natural slope of the ground may be taken advantage of for the automatic conveyance of the mineral downward from one machine to the other." Further on, you very pertinently remark that, "If, however, the country is flat, and the difference of level cannot be obtained except by constructing a high mill of masonry, then the only alternative is to use elevators," stating, however, that your own experience of elevators "has been so unsatisfactory that as far as possible we most carefully avoid them."

As I am referred to in the same article as an advocate of flat mill sites, I venture to ask for space in your valuable Journal for a correct presentation of my views, and for the discussion of the statements above quoted. I have long since arrived at the conclusion, based on a very wide experience, that the terrace form of mill site is not alone unnecessary, but it is also undesirable for the construction of a successful modern concentrating mill. I prefer the flat mill site for the following reasons:—

(a) The various machines can be laid out to the best advantage, alike for the ease of operating them and for the economy of floor space. In other words, abundant room around the machines with no room wasted, the simplicity of lighting and heating such a mill, and last but by no means least, the facility of superintending it. The whole operation can be taken in at a glance.

(b) The crushing machinery can be placed on the ground floor, thus dispensing with heavy framing and masonry supports; while, owing to the favourable grouping of the machines, the mill building is reduced to a minimum, both as to floor space and elevation, and the expense of building retaining walls and grading terraces is saved. In short, the building is erected to cover the properly arranged machinery, and is not adapted to exigencies of a given hill side. It is an ordinary building and not a heavy leaning tower.

(c) By the use of elevators in a mill built on a flat site, each machine can be made, at will, superior or inferior to any other machine to the extent of taking ore from or delivering ore to any other machine—a result that can rarely, if ever, be obtained in a mill built in terraces.

(d) It is obvious that the cost of building a mill on flat ground is much less than that required to build a mill of similar capacity on a terrace hill side. This much will be conceded; but I go further and state from actual experience that the former mill can be operated more cheaply than the latter.

To summarise, I prefer the mill on the flat site, because it can be better arranged, for the work is more cheaply constructed and more economical to run. In a word, because all the advantages are to be obtained with the flat mill site. Having stated my position on flat mill sites, I now propose to join issue with you on the points hereinbefore quoted. Your condemnation of elevators is unqualified. They are all bad; all to be carefully avoided. By elevators, you no doubt mean, as I do, any machine adapted to the elevation of crushed or uncrushed ore. In the old Cornish plants the raft wheel formed a very efficient elevator. This wheel form of elevator is very extensively used in the German and other Continental dressing works, and has, no doubt, reached its full size and limit of usefulness in the Lake Superior dressing works, where thousands of tons of tailings are elevated daily by wheels to a height of, I believe, 36 feet, and discharged into the lake. Belt and bucket elevators are the best for coarsely crushed rock, and centrifugal pumps for sands, slimes and pulps in general. The cage and skip are useful forms of elevators where the height of the lift is considerable, or the ore very coarse.

That the intelligent use of such elevators, properly constructed, should prove unsatisfactory is, to me, a perfectly astounding statement. Taking it literally, it means that the writer of the leading article has never seen a satisfactory mill, for I venture to affirm that a modern concentration mill cannot be operated without some form of these elevators, no matter how steep the hillside or how numerous the terraces. I, at least, have never seen a modern mill without an elevator, nor have I ever seen a mill in which the stream of crushed ore can run "as a stream of water downhill," and, so running, be concentrated, the ore delivered to the bins, the tailings to the dump, and the middlings sent back for retreatment. Let us examine briefly into this point. The ore when crushed must be screened, the fines going forward to the dressing machines, the oversize back to the rolls. The sizing screen is fixed either above or below the rolls. If the former, all the crushed ore must be elevated to the screen; if the latter, all the oversize must be elevated to the rolls. Here, then, there is no alternative. An elevator must be used, though the slope of the hill and the number of terraces are practically unlimited. But you may say that another set of rolls can be provided at a lower level for crushing the oversize. Very true, but even this second set of rolls will have an oversize to take care of, while the product from them must be elevated to the first screen, or to another screen, where the fine ore can join the main stream passing to the concentration machines, and the oversize must be returned to the rolls.

Again, I would point out that each dressing machine, whether jig or buddle, will, under ordinary conditions, produce "middlings," a product requiring further grinding, which again means elevating. Clearly, then, it must be conceded that elevators of some sort are a prime requisite in every modern mill, whether it is built on a terraced hillside or on level ground, and, therefore, the ideal arrangement you advocate—a mill without elevators—is an impossibility; and the allegory of the crushed ore running like a stream of water from machine to machine is, at best, a pleasant fiction. It is sometimes argued that in a terraced mill site only part of the ore requires elevating, while in a flat mill all the ore must be so treated. This is true, but is not the whole truth, for we invariably find that in the terraced mill the smaller quantity must be elevated to the greater height, the result being that the work expended in elevating is largely in favour of the flat mill. A word as to the cost of elevating in, say, a mill of 100 tons daily capacity. We will assume the ore to be elevated to a height of 30 feet four successive times by means of belt and cup elevators, or a total height of 120 feet. 100 tons per day are, say, 140 lbs. per minute. $\frac{140 \times 120}{33{,}000} = 0{\cdot}51$ horse power, call it one horse power, or, say, 20 cents per day with coal at $2 per ton. This is per ton of ore $0·002. The cost of the belt and cups (about the only wearing part) for such an elevator would not exceed $100. They should wear at least six months. We will, however, assume a life of but three months, or 7500 tons of ore, which gives us $0·013 as wear and tear; or a total cost for elevating of 1½ cents per ton of ore treated. Now, even if this expense of elevating was confined exclusively to the flat mill, the engineer who would condemn such a mill site on account of the cost of elevating, and who would build his mill on the hill side regardless of the much greater cost and inconvenience of the latter mill, could study with profit the story of the mote and the beam.

I will, in concluding, give one example of a flat mill where not only has the ore to be elevated, but also the water. The Bonne Terre mill, crushing galena ore through 6 millimetres perforated steel screens, elevating the oversize by bucket elevators, the crushed ore by means of centrifugal pumps, and having the jigs and slime machinery on the upper floor (the exact antithesis of your ideal arrangement) manages to treat the ore at the rate of 800 tons per day, at cost given by Professor Munroe for the year 1887, of 36·4 cents per ton. No doubt it is much cheaper now. The price was divided as follows:—Labour, 13·4 cents; repairs, 10 cents; superintendence, 3·5 cents; coal, 9·5 cents; total, 36·4 cents, say 1s. 6d. per ton, the amount of rock treated, per ton of coal consumed, being 33·59 tons.

It may prove interesting to compare these figures with similar data obtained from European works approaching as near as possible your ideal arrangement, remembering, however, that due allowance must be made for works crushing to a finer or a coarser mesh; the cost of treating being about inverse as the mean diameters of the crushed ore.

In Mr. E. Henry Davies' excellent book, "Machinery for Metalliferous Mines," the mill described on pages 442-444 is probably a good example of a terraced mill, if not of "the awful German intellect, and its ability to becloud a simple proposition." We are told that this mill "is built on the slope of a hill, so that the ore runs automatically through the machines, thus avoiding much expensive handling, and the elevation of the material for retreatment." On examining the plans and sections, the first thing that strikes one is an elevating tower, probably for cages, an extensive system of tramways for transporting the ore from one department to another, as well as a very extensive pumping plant. One looks in vain for evidence of the ore moving automatically or by gravity. There are no figures given as to cost of dressing, but as the crushed ore is fully three times coarser than that of Bonne Terre, the price of dressing, when converted into American rates for labour, fuel, &c., should not exceed 12 cents per ton, provided this terrace form of mill is as cheap to operate as the flat mill.

PHILIP ARGALL.

Denver, September 6th, 1894.

TO THE EDITOR OF "THE MINING JOURNAL."

DEAR SIR,—In your editorial of August 18, on "Modern Concentrating Mills," you say:—"The Frue vanner is the old-fashioned end-bump table, provided with a slowly-moving india-rubber belt," &c. This description might apply to the Embrey concentrator, but the Frue vanner is characterised by a side-shake, rather than an end-bump.—Very truly yours,

C. H. FITCH.

[We admit our correspondent to be correct, as in the chain of development of the old bump-table upwards towards the modern form of concentrator, the Embrey machine should come between it and the Frue vanner. Our readers will remember that the chief difference between an Embrey and a Frue is that in the former an end and in the latter a side shake is given to the sloping rubber belt. The preference seems to be in the use of the Frue with a side shake, as in experiments in the same class of ore it has been found, when comparing side and end shake machines, that the end shake belt must either be placed at a greater inclination than the side shake or vanner belt, or more water used, or a more rapid shaking motion employed in order to give equally clean concentrations. It is possible, however, that for certain classes of ore the Embrey, with a rapid end shake of 200 to 220 per minute, would be the more suitable machine.—ED. *M. J.*]

MINING COMPANY DIRECTORS.

TO THE EDITOR OF "THE MINING JOURNAL."

SIR,—I may be told that it is getting very late in the day to draw attention to the disastrous results attending incompetent and feeble directorship. An answer to this is the old, simple, but well-tried adage, "It is never too late to mend." Reform in this should be as eagerly and as strenuously fought for as progress in a moral, scientific, or political direction. The murmurings and complaints of befooled and ruined investors have now composed a monotonous and wearying tale, enlivened and humanised only by the occasional recital of a story of true and heart-rending pathos. I cannot but think, however, that the eye of the investor is being gradually opened to the insinuating, but insidious snares that are laid in every conceivable direction to befoil and entrap him. Experience has taught him a bitter lesson; heavy losses have inculcated greater thrift and care: whilst disappointment after disappointment have made him exercise more guarded judgment. But still he is very far from possessing the insight and the foresight absolutely essential to successful investment and speculation. In one or two leading articles you have for his guidance drawn attention to many of the fallacies that exist, the remedy for which is, in a great measure, in his own hands. There is one rock, however, on which he is not only wrecked, but which he blindly and resolutely supports. One of the baits on which the promoter most securely and calmly relies for the "catching" of his unsuspecting victim is the directorial figure-head. It is not so absolutely necessary that he should search out a suitable country for the location of his so-called mine, as that he should find a suitable party of "gentlemen" who, for a consideration, will lend their countenance to the fraud he is about to perpetrate, and who, by the glamour of their titles and other artificial adornments really, in the imagination of the investor, make the merest dirt glisten with untold golden wealth. Directors are thus, without possessing, in many cases, even intellectual qualification for the post, thrust into a position of great responsibility and trust, and undertake for the sum of £500 or £1000 per annum to safeguard the interests of the shareholders, and to be the bulwark which shall save them from the designing machinations of corruptible managers and others. They have never seen a mine; they know absolutely nothing of mining machinery; or whether a stope is a reef, or a reef a level; yet it is in the hands of such that the investor readily places his fortune and his confidence. Who is to blame for this glaring anomaly? Not the director, surely, for he is but human, and it is one of the weaknesses of mankind to be ever willing to accept a maximum remuneration for minimum labour. Not the promoter, surely, for we cannot censure him for seeking his goal along the primrose paths of certainty, and avoiding the narrow and rugged road of doubt. It is the investor himself we must blame for lending himself a willing victim to these seductive influences. Why title and social influence should have this attraction is incomprehensible. He seems unable to conceive that capacity, together with honesty, can possibly exist in what he thinks is a lower scale of life. A mining expert, who has a reputation to sustain, who has, in his social relations, proved himself a thorough gentleman, and in his business dealings an upright and straightforward individual would, I take it, be more competent to undertake the peculiarly delicate direction of a mining company. If investors would so far unbend themselves as to take a little advice from me, it would be a prudent act on their part to ascertain the status and technical qualifications a director possesses before he will undertake to entrust him with the expenditure of his capital. Certainly this will entail a little trouble, but it will find its reward in the saving of much anxiety, and possibly in the receipt of greater dividends. If, however, he should not feel inclined to take this precaution, he can still insist upon the directors being remunerated in proportion to the results and the profits, so that they might be on a more equal footing with the shareholders. Directors, like other frail human beings, have an irresistible tendency not to care who sink so long as they swim. This is exemplified in too many instances—so much, indeed, that they will even refuse the last straw to the poor drowning speculator. The latter, however, can turn the tables if he choose. He can make the director struggle along with himself to keep his head above water, and I sincerely hope, in these times of fraud and incompetency, that he will seize his opportunity.—Yours, &c.

A REFORMING INVESTOR.

MINING EXPERTS.

TO THE EDITOR OF "THE MINING JOURNAL."

SIR,—Your interesting article on the above on the 8th inst., and the letter of an "Ex-Expert" in your issue of the 15th, are of special interest just now, when we are likely to have another boom in gold mining. People are beginning to see the cause of depression and dulness of trade is the want of more gold and the wonderful discoveries lately in Western Australia, Victoria, and other colonies are attracting the notice of investors, who should be cautious as to how, when, and where to invest in gold mining.

Much depends on the judgment of the expert (if he be one), and his advice, when given, should as a rule be followed. Some curious incidents might be related as to the experience of mining experts in most parts of the world with respect to the pressure and influence brought to bear upon them at times by interested parties, and the efforts to deceive or bribe them by great promises in ready money or stock. Whenever a boom sets in for gold mines, in consequence of discoveries in a new field, there at once arises a host of mushroom authorities in mining. They may for years have been living in quiet obscurity, following some occupation for which they were capable, but as soon as the cry of gold! gold! is heard, then everyone is wanting a gold mine—one time in India, then in the Gold Coast of Africa, then in the Rocky Mountains, then in Victoria, New South Wales, or Queensland, then in South Africa, and now in Western Australia. The supply of experts appears to be rapidly increasing with the rush of new mines on the market. All sorts and conditions of men, having little or no knowledge of gold mining, are thus blossoming forth into full-blown mining authorities.

I have known cases where experts have had veiled threats of the consequences of unfavourable reports, with dazzling promises of great fees if the report was favourable. Sometimes the removal of an expert has been brought about by direct or indirect means if it was suspected that his report on a mine would be against it.

When an expert reports against a mine, as a rule, he offends all parties interested in the sale or purchase of the property, and his life is not a happy or safe one. He is apt to raise up sullen foes, who will do him an ill turn when opportunity offers. Years may elapse before the opportunity offers, but it will be remembered. Thus, he may apply for an appointment to inspect or manage a mine, and if one of his silent foes should be on the board or in the syndicate his application will be rejected, probably with the remark, "Oh! he's too particular; he's too straight." Some grasping promoter who has been disappointed from making a haul out of other peoples pockets by floating some worthless venture, and which was prevented from being palmed off on the public by an honest report will always be an enemy to a truthful and independent expert.

It is to be hoped that in the rush for gold mines too much credence will not be placed in the numerous amateur authorities now coming to the front, and that the experienced and truthful experts will be cautious in recommending a mine unless they know about what capital will be put on it. Small mines with large capitals are not wanted, but good sized areas of ground in good positions, with moderate capital, are what is required for a chance of profitable investment.—Yours, &c.

ANOTHER EXPERT.

THE PRESENT OF CORNISH MINING AS COMPARED WITH 15 YEARS AGO.

TO THE EDITOR OF "THE MINING JOURNAL."

SIR,—Your correspondent Mr. Charles Bawden, who predicts "that we are soon to see the history of that memorable year 1879 repeated, when tin metal, after falling to £65 per ton, ere the end of the year advanced towards £90 per ton, and who advises speculators to operate for the rise, evidently does not understand the position.

I would merely point out that the tin market is entirely dominated by the Straits, which have doubled their output since 1887, and trebled it since 1879.

In the Straits, tin costs about $420 a ton, and can be landed in London at a very good profit at $520, regardless of the gold value of the dollar.

In 1879 the dollar was worth 44d., so that a ton of Straits tin cost in London about £95, while now, as the dollar is only worth 25d., tin can be landed at about £54 in London to yield the same return. Therefore, the present price of £71 is very inflated, and, as there is no chance of a permanent rise in the price of the silver dollar, it is a moral certainty that tin will fall, and speculators for a rise be landed like the Société des Métaux and the Comptoir d'Escompte de Paris were in 1888, and be left with the baby to hold.—Yours faithfully,

J. C. AULDJOS.

Broughty Ferry, September 15, 1894.

REFRACTORY GOLD ORES.

TO THE EDITOR OF "THE MINING JOURNAL,"

DEAR SIR,—I am responsible for the results obtained from mines containing ores of the above description, and wish to erect a plant capable of treating same. In the selection of a process I am confronted with two diverse opinions. The one is that the iron, copper, or arsenical pyrites is nothing but the matrix of the gold, and requires simply a mechanical treatment—*i.e.*, grind the ore to a very fine state of division and amalgamate by the usual methods. I believe the "Crawford Mill" was designed on this principle. The other opinion is that when gold is contained in combination with sulphur, iron, copper, or any other mineral, a chemical combination takes place requiring a chemical treatment—*i.e.*, cyanide or chlorination process. Perhaps some of your valued correspondents will give their opinion?—Yours truly,

MINE MANAGER.

REPORTS FROM THE MINES.

*** We find it necessary to announce that, owing to the vast numbers of mines, reports, and items of mining intelligence which reach us invariably very late—up to, and frequently after the time of going to press—it is impossible to guarantee the insertion of all of them in the issue in which, in ordinary course they should appear. We always endeavour, however, to make this important feature as complete as possible, and if the secretaries of mining companies, mining captains, and others would kindly make an effort to let their reports, etc., reach us early on Fridays, when it is not possible to let us have them earlier in the week, their doing so would go far to ensure their insertion, and to promote the completeness of our Mining Intelligence.*

BRITISH MINES.

DEVON GREAT CONSOLS.—Wm. Clemo, September 20: Watson's engine shaft. In the 172 fathom level east the lode is 4 feet wide, producing 2 tons of copper and mundic ores per fathom. In Burgoyne's rise in the back of the 172 fathom level the lode has improved, and is yielding 3 tons copper and mundic ores per fathom; for length of rise, 9 feet. In Harvey's winze below the 160 east the lode is 4 feet wide, producing 1 ton copper and mundic ores per fathom. In the 148 east the lode is 4 feet wide, worth 1 ton copper and mundic ores per fathom. The stopes throughout the mines are turning out well.

GREEN HURTH.—September 14:—Annie's vein. The south forehead shows an improvement on the week, worth for lead 18 cwts. per fathom. The headings in the back of the level are looking well. These are worth respectively 3 and 2 tons per fathom.—South branch vein. At the south forehead the vein is opening out and looking more favourable, worth for lead 18 cwts. per fathom.—West crosscut south of Swan's shaft. This crosscut has been driven 7 feet on the week. The end is yet in clean rock. I expected ere this to have reached the other part of the vein, but of course the underlie of the vein may alter.—W. Gray.

LEADHILLS.—W. H. Paull, September 17: Brown's vein. The vein in the 160 fathom level south of Jeffrey's shaft is 4 feet wide, strongly mixed with spar, and worth 25 cwts. of lead ore per fathom. In the 160 fathom level driving north of Wilson's shaft the vein continues rather soft and unproductive. The vein in winze sinking below the 145, south of Wilson's shaft, is 4 feet wide, yielding a little lead ore and likely to improve. The two stopes over this level north of Jeffrey's shaft, will each produce 25 cwts. of lead ore per fathom. The vein in the 115 fathom level driving north of Jeffrey's shaft is 3 feet wide, showing a little ore, but not sufficient to value. No. 1 stope over this level north of Jeffrey's shaft is now worth 30 cwts. of lead ore per fathom. There is no change worthy of remark in any of the other underground operations, which are being regularly pushed forward.

WEARDALE.—Report on Weardale Company's mines for week ending September 15: Groverake, Adamson's drift west vein 3 to 4 feet wide of spar and rider, worth 16 cwts. per fathom. Firestone drift west we are crosscutting to the north side to prove the vein, which so far looks very poor and mixed with stone. Firestone drift east vein 3 to 4 feet wide of spar, better to drive, but poor in ore, worth 8 cwts. per fathom. Loop level to take water from Rake level, strong sparry vein, but no ore to value. Cubic fathom stopes worth 10, 14, 14, 16, 12, 14, and 8 cwts. per fathom. Groverake. Tribute ore returned for the week at 24 bings.—Boltsburn. The crosscut south to prove the flatts, where the vein has been taken out by Bell is mixed with sparry strings, quick in ore, but hard to drive. Stope in vein above Watt's level worth 18 cwts. per fathom. Stopes in south flatt worth 26, 34, 30, 30, 22, 16, 16, 18, and 12 cwts. per fathom.—Greenlaws. Nattrass Gill drift stopes worth 15, 15, 18, and 15 cwts. per fathom.—Lowe's drift. The rise is in plate above the scar Limestone vein 1 foot wide, of spar mixed with ore, but not to value.—Lee's sump. The stope continues a strong sparry vein, fairly well mixed with ore, worth 26 cwts. per fathom. Greenlaw's tribute ore returned for the week at 22 bings.—Sedling. In the 64 level east the vein is 3½ feet wide, of spar and rider mixed with ore, hard and poor in the end, but the roof behind looks fairly well. Stopes above 64 level east worth 15, 16, 16, and 18 cwts. per fathom. Stopes above 64 west worth 16 cwts. per fathom. Driving the 74 level east in the scar lime the vein is about 3 feet wide, composed of fluor and quartz spar, and rider, mixed with ore; poorer this week, worth 12 cwts. per fathom. In sinking below the 74 level we are through the hazel post, which is 2½ feet thick. Ore raised for week 64 tons, ore dressed for week 78 tons, ore and fume smelted for the week 100 tons, producing 60 tons of pig lead.

WHEAL GRENVILLE.—September 17: Goold's engine shaft is down 12 fathoms below the 232. The 232 east of Goold's has improved in value, being now worth £40 per fathom. We have stopped this end for the present, and have put the boring machine to rise against the winze sinking from the level above. We hope to communicate these points in about a week hence.—The winze sinking below the 220 level east of Goold's is worth £50 per fathom.—Fortescue's engine shaft is down 21 fathoms below the 225 level, and is worth £50 per fathom As we have to sink this shaft some fathoms deeper before we shall be deep enough to drive to meet the 232 level coming east from Goold's shaft, we consider it advisable to fix a bucket lift at about the present depth, after which we shall be able to go to the required depth for the level and also for the bottom plat. All other points in the mine are without change to note since last reported.—(Signed) C. F. Bishop.

WHEAL KITTY.—William Teague, John Dunn, Charles Cole. September 14: In the 60 fathom level driving east of crosscut, the lode is worth £10 per fathom. We are of opinion that the lode is divided, and there is yet another part standing to the south which we hope soon to be in a position to prove. There is no change in the 60 fathom level east. On Joe's lode we are about to start a rise near the crosscut where the lode is worth for tin £8 per fathom. We have holed the new vertical shaft to the 20 fathom level; the men are now engaged putting up shaft tackle, and making the necessary preparation for sinking below this level. We shall now be in a position to open on the branch cut in the 20 fathom level crosscut about three months ago.

COLONIAL, INDIAN, AND FOREIGN MINES.

FORTUNA.—Mine report, dated September 12: Canada Incosa ine. In the 150 fathom level driving west of O'Shea's engine shaft the lode continues rather small, and is unproductive. The 110 west of San Pedro's shaft continues to yield good lumps of ore, and is valued at ½ ton per fathom.—Los Salidos Mine. The lode in the 200 east of Taylor's engine shaft has improved, and is opening out rich stoping ground, valued at 3 tons per fathom. In the 105, east of Palgrave's shaft, the lode has become unproductive. Lucas winze sinking below the 62 fathom level worth ½ ton per fathom; the lode is regular, and turns out some stones of ore. The stopes have undergone no change of importance since last reported. Surface works are kept on very regularly, and the machinery is in good working condition. Estimated raisings for September 250 tons. The tributers returned 94 tons of ore in the past month.

LOMA.—The mine superintendent reports under date August 16 as follows: Mine. We are working steady, but as you can understand in present month, we cannot look for much water. We have not over 200 inches, and not a drop wasted.—Grand Cruz Gordor or Guarumo. The Soto mine continues to look very promising, but to get in shape—particularly with so very little water as at present—all we want is the reservoir; with this, even in the dry season, we will be able to do good work.—Reservoir. The weather for this is favourable, and we are getting well ahead. At present we are increasing area by use of water, that is to say, washing away the earth, but not with monitor. Cost on reservoir is only temporary, it will soon pay cost back when finished. Having promised and stated that the mine will pay, no stone shall be left unturned to bring about this end. I have great faith when we get to work in Soto mine we will alter appearance of all. No rain yet, and consequently no increase of water.

[Reports from the Mines Continued on Page 1048.]

LATEST FROM THE MINES.

CABLEGRAMS AND TELEGRAMS.

ALASKA MEXICAN.—A cablegram from Alaska reports the clean-up for August as follows:—"Period since last return, 31 days; bullion shipped, $20,300; ore milled, 6434 tons; sulphurets treated, 136 tons. Of bullion there came from sulphurets $4829; working expenses for period, $9557."

AURORA.—The operations of the company for July are as follows:—575 tons of ore milled, 20 stamps working 7¾ days, yielded 356 ounces 4 dwts.; sold for £1330 13s. 5d.

BAYLEY'S REWARD.—The following cablegram has been received from Melbourne by the London office:—"Week's run 700 ounces from 80 tons; dividend of 4d. per share (£8000) has been declared, payable 29th inst.; books closed 22nd to 29th inst., both days inclusive."

BRILLIANT BLOCK.—A cablegram from the head office in Charters Towers: "Have crushed during the fortnight 1187 tons of quartz for a yield of 884 ounces of gold. The profit on the fortnight's run is £1350." The approximate value of this return is £3050.

COSTA RICA PACIFIC.—A cablegram advises the shipment on the 14th inst. of bullion valued at £1650.

DAY DAWN BLOCK.—The directors have received the following cablegram from the general manager at Charters Towers:—"Have crushed 122 tons of quartz from No. 10 level west for 106 ounces of gold; have struck a reef at the bottom of No. 3 shaft showing gold; await further development."

DON PEDRO.—The directors have received the following telegram from the mine:—"Have struck the lode north from 50 fathom cross cut; boxwork extracted."

EL CALLAO.—Messrs. Baring Brothers and Co. (Limited) have received the following telegram from El Callao Mining Company:—"226-250 ounces of gold produced by El Callao Mine for the past fortnight, and 1001-1025 ounces by the Colombia Mine."

ELKHORN.—Bullion produced in the mill for the week ended September 15, 8600 ounces.

FRONTINO AND BOLIVIA.—July produce: Value, £7298 3s. 8d.; cost, £5680 2s. 2d.; estimated excess of returns, £1618 1s. 6d.

GELDENHUIS ESTATE.—Last month's profit was £7000.

HARQUAHALA.—The following is the cabled estimated return for the month of August:—"Crushed during the month, 3320 tons; estimated gross value of gold produced, $24,600; miscellaneous revenue, $500; equals $25,100; Estimated total expenses, $11,500; estimated profit for the month $13,600; (at $4·90 to £ sterling, £2775,"

KELLY'S QUEEN BLOCK.—Messrs. Burkitt, Munro and Co., of 16, Cornhill, E.C., have received the following cablegram, dated Brisbane, 17th inst.:—"Kelly's Queen Block crushed 270 tons for 478 ounces; dividend, 4d. per share."

LAS CABESSES MANGANESE.—Production for the week ending September 15 (6 working days) 696 tons, or a daily average of 116 tons.

MAINLAND CONSOLIDATED.—A cablegram gives the following crushings from the Mainland in the Murchison:—"Mainland Consolidated 10 tons for 268 ounces, and one bucketful for 150 ounces. Dayley's Claim, 450 lbs. of rock realised 550 ounces. The bucketful referred to came from the Last Chance Claim.

MOUNT LEYSHON.—Fortnightly crushing: 1400 tons crushed, 283 ounces gold; 35 stamps out of 40 mill ran 12 days; loss, £66.

MYSORE.—The directors have received a telegram from Mr. Richard Hancock, as follows:—"890 north of Rowse's shaft have intersected ore that assays 15 dwts. per ton; width of lode 4 feet."

NEW RIETFONTEIN.—The Lewis Mining Trust have received the following cable from Mr. Lewis:—"No truth in the reported development of the mine. Mine looking worse. The price of shares must decline in value."

NEW QUEEN.—The following cablegram has been received, giving the result of the crushing for the past fortnight:—"No. 1 formation, 250 tons, yielding 167 ounces gold; No. 4 formation, 170 tons, yielding 67 ounces gold. Expect the result will be better after our next clean-up."

NO. 1 SOUTH GREAT EASTERN.—Mr. Samuel James, of 3, Copthall Chambers, has received the following cablegram, dated Gympie, September 15:—"No. 1 South Great Eastern crushed 232 tons yielding 161 ounces; dividend declared, 2d. per share."

OURO PRETO.—Return for August: 4126 tons produced 42,525 grammes, equal to 1367 ounces.

SAN SALVADOR SPANISH IRON ORE.—September 18:—The s.s. *Crimdon* sailed from Santander on the 15th inst. with 2130 tons of this company's ore for Rotterdam.

STAR OF THE EAST.—Mr. Samuel James, of 3, Copthall Chambers, has received the following cablegram, dated Adelaide, September 15:—"Star of the East (Murchison) crushed 170 tons, yielding 320 ounces of gold."

VILLAGE MAIN REEF.—Last month's crushing: Mill ran 28 days, and crushed 3800 tons, which yielded 1750 ounces free gold and 68 tons of concentrates, assaying 3 ounces. Tailings assayed 3 dwts.

VIOLET CONSOLIDATED.—The following is a copy of a cablegram respecting trial crushings now being carried on on this company's property, received from the company's agent in Johannesburg, dated 17th September:—"Violet Consolidated Gold Mining Company: 400 tons stone crushed yielded 140 ounces gold during 11 days, plates only."

VAN RYN.—Net profit for the month, £383.

VICTORY (Charters Towers).—The London office has received the following cablegram from the head office in Sydney dated September 20:—"Crushing (for the fortnight) from No. 2 shaft 231 tons for 154 ounces. Clarke's Brilliant and Worcester shaft 47 tons for 65 ounces; total, 278 tons for 219 ounces of gold."

ZAMBESIA EXPLORING.—The following cablegram has been received from Mr. Robert Williams, at Salisbury: "Arrived here safely yesterday. Inez reef looks well. 100 feet level, Buluwayo Syndicate, further 120 claims pegged."

WE understand that Messrs. Dixon and Corbitt and R. S. Newall and Co. (Limited), of Gateshead-on-Tyne and London, have just secured an important contract from the Government for a large supply of hemp, cordage, &c., for the War Department and Woolwich Stores.

ROYAL COLLEGE OF SCIENCE AND ROYAL SCHOOL OF MINES.—The next session begins on Wednesday, October 3.

RUSSIA'S IRON TRADE.

AN interesting report upon the iron trade of Russia has been supplied recently to the Foreign Office by Mr. H. O'Beirne, who is thoroughly at home in this branch of industry.

European Russia, including the Caucasus and Finland, has an area of 2,095,500 square miles, and produced in 1892 some 1,060,000 tons of pig-iron and cast-iron, 480,000 tons of wrought iron, and 516,000 tons of steel, which is equivalent to saying that with an area over 16 times that of Great Britain, over nine times that of Germany and that of Austria-Hungary, and about 10 times that of France, her iron production, taking the output of pig-iron as a test, was less than one-seventh that of Great Britain, less than one-fourth that of Germany, half that of France, and only slightly more than that of Austria-Hungary. A comparison of the statistics relating to the consumption of pig-iron shows that during 1891 in Russia the quantity of pig-iron consumed per head was 22·16 lbs., whereas in Great Britain it was 449 lbs., in Germany 242 lbs., in France 97 lbs., and in Austria-Hungary 61 lbs. The chief causes of this insignificant average is the low state of the manufactures in the country and the fact that in Russia wood is in many cases substituted for iron. There are five principle regions for the consumption of iron. Central Russia obtains an important part of its wrought iron and steel ready-made, chiefly from the Urals, and in smaller quantities from South Russia, Poland, St. Petersburg, and abroad; makes the remaining part, principally from pig-iron, obtained from inferior local ores; these, however, are supplemented by a small quantity of pig-iron and ore obtained from the Urals and South Russia. The fuel consumed in smelting is coal sent from the Donetz, paying freightage of 12 c. per pood; and in other processes of iron making, and in steel making is Donetz coal, expensive local wood fuel, and naphtha from Baku.

For the most part, the iron and steel manufactured in the Baltic region is made from imported pig-iron—mostly from Britain—and partly also from pig-iron obtained from the Urals; a considerable quantity of wrought iron and steel is imported from abroad, and received from the Urals and Central Russia and Poland. Manufacturers in the Polish region make most of their wrought iron and steel from pig-iron, which is smelted from poor and expensive local ores on coal and coke imported at a duty rate of 1 c. and 1½ c. per pood (1s. 11½d. and 2s. 11½d. per ton). These ores are supplemented by some 12,100 tons pig-iron imported from Austria and Germany. South Russia is the only district which produces its wrought iron and steel under normally favourable conditions, uniting rich iron deposits with an abundance of good local coal. The eastern district has rich deposits of ores throughout the Urals and in the Governments of Perm and Viatka, but conducts its smelting and other processes chiefly on wood fuel. The production of wrought iron and steel taking place under unfavourable conditions, the values of these products naturally stand high. Assuming that the present smallness of the demand for iron results from the backward state of manufactures and similar causes, we may expect with the increase of population and the development of industries, a corresponding expansion of the iron production. In so far as the demand is checked by the substitution of cheap wood for expensive iron, the question of the increasing scarcity of wood has an important bearing on the future of the iron industry. More than 30 per cent. of the area of European Russia (including the Caucasus but not Finland) is forest. This, however, gives no correct idea of the extent to which consumers throughout Russia have wood at their disposal. While the northern districts have some 54 per cent. of forest area, and the central Volga and lake districts 30 per cent., the Moscow trading regions, Poland and the Baltic provinces have only from 23 to 17 per cent. of forest, and the black soil steppes practically none. "Less than half of Russia is rich in forest, one-fifth is poorer than Germany or France, and one-eighth has scarcely any." Much waste arises from mismanagement in private forests, though subject to a limited Government control. The tariff has been directly instrumental in bringing into existence some of the more important branches of the iron industry; notably the pig-iron industry in Poland, and the iron and coal industry in South Russia. There is difficulty in assigning limits within which the industry is still dependent on a continuance of protective policy. In the South Russian district the principal feature is the rolling of steel rails—that branch of its production which is absolutely protected against foreign competition. Probably if import duties on iron were removed, the Polish and Moscow districts would reduce the smelting of inferior and expensively obtained local ores, and would produce wrought iron and steel on cheaper imported pig. For 1892 the total production of pig-iron in Russia was fully 1,000,000 tons, as compared with 460,000 tons in 1886.

FORTHCOMING MEETINGS.

*** We shall be obliged if Secretaries or other Officials of Mining, Railway and other Companies' will be good enough to advise us as early as possible of the date, time and place of their forthcoming meetings—whether statutory, semi-annual, annual, general or extraordinary, confirmatory or adjourned—in order that particulars may be announced for the benefit of our subscribers and more particularly our country readers. Balance sheets, reports and other matter to be submitted at such meetings should, where possible, accompany the intimations of the meetings sent*

Name of Company.	Place.	Nature of Meeting.	Date.	Time.
Kaboonga Mining Company	Winchester Ho.	General	Sep. 27	12 a.m.
African Gold Recovery.....	Cannon Street	General	Sep. 27	12 a.m.
Harquahala Gold Mining Co.	Winchester Ho.	General	Sep. 28	12 a.m.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

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*** ADVERTISEMENTS (which should in all cases be sent direct to THE MANAGER) can now be received for the forthcoming issue of THE MINING JOURNAL, RAILWAY AND COMMERCIAL GAZETTE, on FRIDAY, at 18, FINCH LANE, E.C., up till 6 p.m., and at 3, DORSET BUILDINGS, SALISBURY SQUARE, E.C., until 9½ a.m.

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CONTENTS

Of this Number of "The Mining Journal, Railway and Commercial Gazette," September 22, 1894.

LONDON: SEPTEMBER 22, 1894.

IMPROVEMENTS IN THE CYANIDE PROCESS.

THE success which has of late been obtained in the recovery of gold from the tailings of stamp batteries represents a matter of the utmost importance to the immediate future of gold mining. Nothing less than a revolution in the prospects of gold bearing deposits resulted from the practical application of the principal that cyanide of potassium can be used to dissolve gold, and that the precipitation can be effected by means of zinc shavings. For the past few years the burning question in gold mining has been how to work out this cyanide process so as to get the best possible results. It is only quite lately that details have become so far perfected through the experience gained in its actual working as to give results anything approaching those which were expected. In the first place, it has been found impossible to work the cyanide process successfully with inefficient crushing appliances. Upon the perfect pulverisation of the ore depends very largely the degree of efficiency obtained in the working of the cyanide vats. To this fact are to be attributed in some measure the failures which have followed the adoption of cyanide in many gold mines in the United States and in Australia, and it is one strong influence in the marked movement now proceeding for enormously increasing the weight of stamping heads—up to 1050 lbs. each in the latest instances. Then the appliances, and even the methods of the cyanide works, require a careful attention to details and a special knowledge only acquired by long experience of the process. There is at the present time hardly a cyanide plant in the Witwatersrandt—the home of the cyanide process—which does not include much that is purely experimental. At the same time, there is a striking advance in the latest plants to those which have been only recently erected. The recovery of gold by the use of cyanide of potassium is, however, now extending largely in many other gold fields than that of the Randt; and amidst the rivalry of engineers and managers in different countries there should certainly develop many important and valuable improvements in practice. Trials upon a more scientific basis are to take place again in America and Australia, and we are glad to hear that capital is being provided—though, unfortunately, from the United States—to treat the gold bearing ores of British Columbia with cyanide of potassium.

One of the principal economic difficulties of the cyanide process has been the transport of the tailings. So far as we can judge it will be found cheapest to utilise mechanical wire rope haulage. Then the expeditious discharge of the tailings is a most important matter, as upon the rapidity with which the plant can be worked must depend largely the amount of capital required in the first instance. Large improvements have been made in this direction lately, especially at the Langlaagte Royal, where the time of discharge has been reduced from five hours to three, or three-and-half, by means of patent doors. What is now wanted is a light dredging apparatus for facilitating the emptying of the fixed tanks, and there can be no doubt that the ingenuity of mining engineers will be found equal to providing this. Tailings pumps, though they have been largely adopted do not seem to have met with any success over a protracted period of working. Undoubtedly, it would be a most valuable step in the progress of the cyanide method of ore treatment if efficient pumping appliances could be obtained to get rid of the tailings, instead of depending upon gravitation for their discharge. Apart from this important question, a good deal in the efficiency of the process depends upon the means used for distributing the tailings in the vats. There are many systems at work for doing this, ranging from revolving arms of different lengths to ribbed disks with a spraying motion. Continual improvements are being made by practical men in those details which, of course, deal rather with the reduction of working expenses than with any especial increase in the efficiency of the process. But cheapness must be after all the primary quality of any process which is intended to deal with the residuum of low grade ores, and thus make their working a matter of profit. Shareholders in Transvaal gold mines will know how bitterly they have been disappointed in many cases with the results of newly erected cyanide plants, which were expected to make dividends practicable. They should, therefore, be gratified to receive our assurance that invention is active in this detail work upon which the economic success of the process depends.

At present the efficiency of the process is very much compromised by the fact that the amount of cyanide used is greatly in excess of the theoretical quantity necessary for the treatment of the ore, and as no means have yet been found for utilising the cyanide over again, this represents a considerable item of loss to the shareholders. Apart from this, it is seriously a question whether some steps will not have to be taken before long to prevent the escape of the liquid which has converted the vast heaps of residuum outside the mines into mountains of prussic acid. So far, no inconvenience seems to have been felt at this presence of poisonous deposits in the midst of a growing population, but the danger is one that will have to be considered in the future development of the Witwatersrandt mines. It is almost certain, however, that the difficulty will be overcome very shortly either by an improvement of the cyanide process or by the invention of some new method of treatment. While the owners of the cyanide patent are able to reap such enormous profits from their discovery, it is not surprising that other inventors should seek a fortune in the same way. By the aid of electricity it has been sought to prevent the waste of cyanide by using it over and over again, and an attempt was made some time ago to replace the process by another in which the basis would be aluminium. So far, but little has been done in this direction, though the advances made lately in experimental work would lead to the belief that the time is not far distant when the ore will be treated in a more economical manner than is now possible. At present, the cost of treating tailings on the Randt may be taken as an average for new and properly constructed plants at 5s. a ton, and if the experiments now being made should prove successful upon a large scale, this sum will shortly be reduced to 3s. 6d. per ton, thus leaving a balance of 1s. 6d. per ton as a clear profit to the shareholders. This refers only to working details, but there is besides the very important question of concentration of tailings to be considered. Experiments recently conducted at the Ferreira Mine confirm the opinion which we expressed some time ago, in opposition to the rather discouraging attitude assumed by the Witwatersrandt Chamber of Mines, that it was perfectly possible to take out the rich ore in the concentrates and treat them separately. All these things should be most satisfactory to mining engineers, managers, and shareholders in all parts of the world; but, after all, they are by no means the most hopeful of the tendencies which are at present developing towards the more economical treatment of battery tailings and slimes. We have dwelt on them, for the purpose of foreshadowing benefits that may be shortly realised, but the advantages promised by the discovery of actually new cyanide processes are certainly more far-reaching. There are two or three such processes of which the theoretical success, at least, is said to be fully proved.

AUTUMN PROSPECTS.

NOW that Autumn is rapidly approaching, we may fairly confidently look forward to an improvement in the mining and metal interests, consequent, in great measure, upon the certainty we now feel as to the revised American tariff. It must be admitted that there is clearly an apparent change for the better in the general aspect of affairs. There is a distinct return of confidence in financial and commercial circles. As for mining, it is evident that after a lengthened period of depression and economies, the moneyed public is once more finding it possible to provide the means for embarking upon new enterprises. For the moment, it is satisfactory to find that mining is very well represented in the increased activity which has lately been exhibited upon the Stock Exchange. A great deal of capital is being raised for working the prolific deposits of gold in Western Australia, whilst the buying up of promising claims in Matabeleland has absorbed large sums of money in several important syndicates. Moreover, the majority of what may be termed "respectable" gold mining shares are now very firmly held, and possessors are evidently impressed with the probability of a greater revival of speculative feeling. One important influence in the advancement of mining shares is already afforded by the very encouraging demand which is being expressed for auriferous scrip upon the Continental Exchanges. Parisian firms of financiers are vying with those of London to underwrite new capital in Transvaal gold mines. Now that the South African mines have secured the confidence of French investors an abundance of capital will be forthcoming for any undertaking that offers a satisfactory prospect of remunerative returns. Opportunities for investment in other classes of security have been so largely restricted by recent failures, that the public finds that the gold mining concerns, against which it had hitherto entertained a certain prejudice, can alone afford them a guarantee for the future. We would that some sure process could be adopted whereby we could detect the good securities from the bad; but we are afraid that investors will for many years yet have to exercise their own judgment as to suitable investments. We do not say the discovery of such a process or the adoption of it is impossible. It is within the bounds of probability that promoters and others will some day find it extremely difficult to dupe the public as they have done in the past. But that happy day may not be for us, and we must, therefore, rely upon our own discretion and foresight.

As to the prospects of the general revival which must afford the necessary impulse to the metal markets, there are many grounds for believing that we are approaching it. To take the iron and steel industries, it is eminently re-assuring to feel that everything points to the probability of a revived demand for iron and steel before long. Railway companies and governments have been obliged to retrench so seriously during the past few years that they have not only hesitated to incur expenditure upon new works, but have actually reduced renewals to the lowest possible limit. And depression nowadays hits our metal industries harder than ever it did before. Formerly we were sure of the renewal orders from the Continental and American markets, where railway and other engineering works were in course of being carried out. Now, however, all our great customers, down even to Italy, Spain, and Russia, roll their own iron and steel, build their own locomotives, and attempt to shut our own metallurgists out by heavy tariffs. Both at home and in the colonies a great deal of money is likely to be spent in railway and other undertakings, and in many other directions an increased consumption of iron and steel promises to bring about more activity in our metallurgical trades, and this, coupled with the readiness of investors to seize hold of any special movement in shares, should have an immediate effect in improving the position of the mining industry.

NOTES AND COMMENTS.

THIS week we have had the benefit of conversation with expert gentlemen just arrived from Western Australia; who have inspected nearly every inch of the country; and who from their long experience are capable of judging the quality and permanency of a reef. We do not mind making confidents of our readers and laying the essence of these opinions before them, with the request that they will not take them as our own convictions, but merely on their merits. In another part of this issue we let Mr. Begelhole speak for himself. His statements, we are pleased to say, have been endorsed by those from other sources. Undoubtedly, the most wonderful discovery of late is the Londonderry. So marvellous is its richness that it defies adequate description. It is incredible. Words cannot convey any idea as to the amount of gold it contains, and were it stated in plain, unvarnished figures, it would be received with universal credulity. To gain any conception of it, one must visit it, and gaze on the wonderful with one's own eyes. Such are the expressions of these West Australian gentlemen which are confirmed by private letters we have had the privilege of reading, and which could not possibly be written with an axe to grind. The White Feather, we are informed, is another magnificent find, though, of course, not nearly so rich as the Londonderry. Considering the position of these different properties, it would be strange if other marvellous finds were not made in the same locality.

THE *Miners' Right* of Western Australia discusses in a long article the merits of a proposed amendment to the existing Companies' Act, which, it is understood, will be introduced during the present Session of the Western Australian Parliament. The writer has evidently a clear knowledge of the injury done to a Colony by the booming of worthless concerns, and is upon that account desirous of establishing some system by which shareholders in London should have access to the register of the Department of Mines, and so be in full possession of whatever is known of any particular mine that may be in course of flotation. The main provision embodied in the proposed measure is that no prospectus of any mining company shall be issued unless accompanied by a report from the Secretary of Mines stating the amount of work done on the property, the width of the reef or alluvial deposit, the character of ore and country rock, the amount of water likely to be encountered, the facilities for the transport of machinery, and the estimated value of the ore, together with a statement of the reason upon which it has been based. Threatenings of heavy fines and long terms of imprisonment are breathed out against all who attempt to evade this enactment. As it stands, the measure would certainly seem to offer a strenuous barrier to the foisting of a valueless concern upon the unsuspecting public.

GOLD mining seems to be showing somewhat more activity in New Zealand, and it is declared that a great deal more might be done in this direction if Government were to extend increased encouragement to prospectors. There are, it is said, many deposits in the colony, of which enough is known to justify experimental borings being undertaken with public money. On the West Coast the reef has at last been struck by a tunnel which has been driven some 4000 feet during the past few years. As the site of the discovery adjoins the property of the prosperous Alpine Company sanguine views are entertained of its importance. A reef carrying gold 14 feet thick has been found at Reefton. On the Otago fields there has lately been quite a revival in both quartz and river mining. Several nuggets of about 4 ounces each have been found. The New Zealand Government is considering the enactment of more favourable provisions for claimholders and prospectors, and these recent successes would seem to indicate the wisdom of such legislation. For some time past the experienced gold miners of New Zealand have been flocking over to Western Australia.

WE have from time to time in these columns, as vigorously as we are able, advocated the policy of Governments giving all the aid possible to further the progression of mining industry. We are pleased, therefore, to note that the New Zealand Colonial Treasurer, in his budget, recommends this line of policy to his Government. To quote his own observations, he says:—"In order to encourage the development of the mining industry I am of opinion that further aid should be given towards inducing miners to settle on the land, and the construction of roads and tracks to open up the country in mining districts, and also that aid should be given towards prospecting, especially in testing deep levels. I believe that this would greatly extend the field for mining operations, and afford remunerative employment to a larger population than that at present engaged in this industry. Indeed, I think that many who now swell the ranks of the unemployed could, by receiving moderate assistance, be occupied with great advantage to themselves in searching for hidden treasures. Gold mining has in the past been a great feature in the advancement and prosperity of the colony, and encouragement should, therefore, be given in the future to the large number of people who are supporting themselves by this industry. The question of proclaiming rivers and streams as channels for the deposit of tailings and debris from mining claims has received the attention of the Government, and I shall ask the House to make provision for the conservation of the interests of those engaged both in mining and agricultural pursuits, where the latter are affected by the streams, channels, or tailings connected with the mining industry."

THE statutory meeting of the Joe's Reefs United (Sheba), Limited, was made, as usual with regenerated companies, the occasion of a close survey of the present position of the concern. The Chairman confined himself in his opening address to a simple statement of facts, and the facts themselves bear weightily upon future prospects. The visit of one of the directors to South Africa has ended in the acquisition upon very advantageous terms of a lease, with option to purchase, of the Thomas's property, which is said to have considerably outshone the Joe's Reefs in its capacity to yield gold. From the other side come reports that the shareholders are satisfied with the progress of the company's affairs, and are looking forward expectantly to what the future may bring. From all that was said at the meeting it appears that the plant upon the property is a good one. They have an excellent wire tramway, all the appliances necessary for the utilisation of the water-power, with an additional 10 stamps in working order, making 15 in all. A perusal of the speeches made by the Chairman and Mr. Henwood goes far to explain how it is that the shareholders appear to have been so thoroughly in accord as to the reconstruction proposals.

THE Chairman, at Monday's meeting of the Argentine Concessions Company, was evidently fully conscious of the hopeful character of the concern in which the shareholders were engaged. The measures taken by the board to ensure that the best possible turn should be given to the property are such as would commend themselves to any business man. The reservation of £15,000 as a working capital, and the acquisition on peculiarly advantageous terms of a valuable plant and machinery, are no inconsiderable factors in success. In the choice of a manager, too, the directors have shown their wisdom. There seems to be a unanimous opinion that Mr. F. B. Deering is a capable and reliable mining engineer. The commendations of mining firms of a high reputation concur in pointing him out as a man into whose hands the future of a mine may safely be entrusted. With an ample working capital, an excellent plant, and an able manager, the one other thing necessary for success would seem to be a mine susceptible of a favourable working. Upon that matter a good deal of evidence, direct and indirect, leads to a hopeful view. These considerations are a complete support of the sanguine opinions expressed by the Chairman of the meeting.

THE increasingly energetic and whole-hearted manner in which America has begun afresh since the passing of the tariff to take up the tin-plate business, will, of course, create a largely increased demand for tin, and will lead to a strengthening even of the English tin market. The matter, therefore, is one of much importance, not only to tin speculators, but also to shareholders in tin mining properties. Such reflections are aroused by the latest information available from semi-private sources as to the great quickening of activity that has within the past week or two been noticeable among the existing United States tin plate firms, and as to the readiness of new people to enter the business. One of the largest American iron and steel manufacturers is so satisfied that there is "money in it" that he and several of his friends are now forming a company to manufacture tin-plate, and as the capital is likely to be large and the promoters are influential, the undertaking is pretty sure before very long to considerably increase the American output. Yet another instance is to hand — a firm at Pittsburg, who, without any practical experience of the trade have yet had intimate relations with iron and steel and tin-plate makers, have now decided to invest £50,000 in a tin-plate plant, and are getting forward with the construction as rapidly as possible.

ALL this is, we are aware, contrary to what might have been expected, for it was anticipated that the lowering of the duty down to £5 12s. per ton would have the effect of admitting the Welsh goods so cheaply that it would not be worth while the Americans competing with the Welsh makers. It is true that this has to some extent weeded the trade out on the other side, or rather, perhaps we should say, that it has deterred a lot of small firms from entering the business who otherwise would have done so. But this very process of deterring has cleared the ground, or rather kept it clear, for the large firms. These last, therefore, have determined that by great outlays in the most modern machinery, they will "go one lower" than the Welsh, and will wage a battle to the death to extend their hold of the American market. They recognise the fact that the United States is by far the greatest consumer of tin-plates in the world, and that it is rapidly becoming a still greater consumer. They believe that as the present duty is as low as the Democrats want to go, and much lower than the Republicans wished, any further change will be in an upward direction, which, of course, would be in their favour; and they declare that in spite of the increased shipments of Welsh tin-plates to the States, which already are beginning largely to augment, yet America's requirements are ample to enable them, with the newest machinery and very deep pockets, to make fortunes out of the American made goods. Whether in these hopeful views they are correct, remains, however, to be seen.

THE Duke of Argyle's forecast as to the failure of the Scotch coal strike is being abundantly justified. The men have lost confidence in their leader, and with it all hope of success. The result is that their organisation is in imminent danger of breaking down. It is something to their credit that they are prepared with a calm philosophy to accept the inevitable. Resolutions have been proposed at recent meetings to return to work; others to send deputations to the masters in the hope that a board of conciliation should be established. Meanwhile the tangible result of the breakdown of the strike is that many are returning to work in Glasgow and other parts of South Scotland. It is painful to reflect on the suffering which must have fallen upon the coal workers and their families during the progress of the war. In many cases, however, the men cannot be absolved from a large share of blame. The strength of their organisation has sometimes induced them to lend a deaf ear to suggestions of amicable arrangement. An occasional failure may act as a salutary check upon undue confidence, and the consequent maintenance of an unduly bellicose attitude. It will come as a surprise to many that permanent conciliation boards have not already been appointed.

A FURTHER complication of the wages question has arisen between the colliery enginemen of Yorkshire and their employers. A certain deduction having been made, or proposed to be made, from their wages, they have been polled on the question of acceptance or rejection of this step. Some 400 or 500 of the men have already returned their ballot papers, and of these only 20 signify acquiescence in the reduction. No doubt is entertained that the remainder of the men will poll with the same approach to unanimity. The whole matter will then naturally hinge upon the decision of the masters; and if it be, as is not improbable, an insistence upon the reduction, the men will appeal to their union, and a strike, with all its attendant difficulties and ill-feeling, will be inaugurated. A good deal of reliance is placed by the men upon the strength of their organisation, which has latterly been perfected; and the difficulty which the masters will experience in supplying at a moment's notice a sufficient number of men competent to discharge the responsible duties falling to the lot of the enginemen.

BULUWAYO seems about to obtain rapidly the status of a town. The original inhabitants of the place tired of the lawless past, have approached Dr. Jamieson with the request that he would appoint a judge to settle whatever differences might arise among them. The request has been granted, and appears to have given general satisfaction. Most of the Matabele have surrendered their arms, and the dangers of travelling in the surrounding country are reduced to a minimum. Building has been going on apace, and some hotels, constructed and furnished on a superior scale, are being put up. Considerable progress has also been made in the construction of the Courthouse and the other governmental buildings. Evidently, Buluwayo is going to be a well-built and law-abiding town.

Beyond this, there is the discovery of a salt lake, yielding salt of peculiar whiteness and purity, and of some other auriferous deposits, of which presumably we shall hear a good deal more when the reports of the mining men now inspecting in the districts shall have been received. What at present is known of the reefs in the locality is highly favourable, and workings are in full progress already, so that soon we should be able to apply the most certain of all tests in estimating their worth.

OUR CITY ARTICLE.

FRIDAY EVENING.

THE MINING MARKET.

An active week.—Australians booming.—West Australian Gold Fields buoyant.—A satisfactory close.

THE past has been an exceptionally busy week—especially for West Australian shares. There was, at the opening on Monday, some considerable activity in the South African department, but the movements did not set strongly in any one direction, the rises and falls effecting a balance. Diamond shares were more active still. A number of vague reports were abroad as to improvements in the diamond trade; but little of a solid character transpired. Land shares were fairly strong. By far the greater part of the activity of the market seemed to be concentrated in West Australian shares. Announcements of fresh discoveries in that region carried the shares into high favour, and the bidding was brisk. Considerably less business was done on Tuesday in the South African market. Gold, Land, and Diamond shares were all quiet, and their dulness was more especially thrown into relief by the almost wild activity in the West Australian department. All the chief Land and Diamond quotations were somewhat lower. At the opening of the market West Australians experienced a small set-back, owing to profit-snatching. This did not, however, last long, and shortly afterwards buying at the slightly lower figures was recommenced vigorously. Gold Fields, Mawson's Reward, and Golconda maintained their strength. Indian shares were also fairly steady, one or two of the chief shares being somewhat in demand. Comparative quietude remained as the distinguishing characteristic of the South African market throughout Wednesday. Shares were undoubtedly firmer, and there were a good number of rises, but the activity was not on the scale which ruled last week. Land shares were, on the whole, perhaps the most favourable section in this market. Almost without exception the shares rose, though only to some trifling extent. Whatever flatness prevailed in the gold section was obviously due to passing influences, such as the reaction upon the recent buoyancy, the tendency hitherto manifested to snatch profits and the concentration of interest elsewhere. The unusual volume of business transacted in West Australian shares was undoubtedly one of the main contributory causes of the lull elsewhere. Buyers were very plentiful, and the rises universal, or almost so. The unfavourable tendency noticed on the preceding day deepened on Thursday into a distinctly downward tendency. Land shares vacillated a good deal, but eventually closed unchanged. Diamonds and Golds were dulness itself. Even the Miscellaneous section was much quieter than heretofore. Most of the shares remained firm, however, though the rises were not so frequent or so considerable as has been generally the case during the week. It seems as if this arrestment would be merely of a temporary character, and at the close of the week the outlook is distinctly hopeful.

British Mines.

The Cornish market has been dull all the week, and there is not much business to report. The fluctuations in tin have had very little effect either way on the price of shares. Dolcoaths continue firm, and close about 71. Carn Brea are steady at 7. Tincrofts have been in demand at 12, and West Kittys at 6⅞. Grenvilles close firm at 18 to 18½. A fair amount of business has been done in Wheal Kitty at 14s., and a few Cook's Kitchens have been sold from 5s. to 7s. 6d.—Risen: Dolcoath, 10s.—Fallen: East Pool 5s.; West Kitty, 5s.

South African Shares.

Hardly so much business was transacted in this department at the commencement of this week, as was the case during the closing days of last. About an equal number of rises and falls were recorded in the gold section. In the list of rallies were Rand Mines, Jumpers, and Robinsons, which were all two or three shillings better. Langlaagtes, Crowns, and Henry Nourse, on the other hand, receded. Cities revived to 15¾, Durbans improved to 6½, and there were also rises in Jubilee, United Roodepoort, Ferreira, Salisbury, Wolhuter, Worcester, Metropolitan, and others. Orions were again enquired for, and improved to 3 1/16. Primroses kept firm at 4½, Glencairns at 35s. Rietfonteins fell back at £2. On the news of a bad strike Land shares were not strong. Chartered remained dull, and were offered in the street after hours at 35s. 9d.—a fall of 1s. Exploring and Consolidated Gold Fields moved in sympathy, losing ⅛ and 1/16 at 4 13/16 and 2 11-32 respectively. Zambesia and Oceana fell 1/16 each, and South African Gold Trust dropped 6d.; but Mozambique were enquired for, and closed 6d. higher at 17s. 6d. Diamond shares hardened on a number of indefinite reports, Jagers gaining ⅜. De Beers, however, fell 1/16, South African shares were a good deal quieter on Tuesday. City and Suburban and Rand Mines were each ¼ lower, and falls of about 1/16 occurred in a variety of shares, including Crown Reef, Consolidated Deep Level, May Consolidated, New Rietfontein, Salisbury, Wemmer, and Wolhuter. On the other hand, there were distinct improvements in Gold Fields Deep, Henry Nourse, Jubilee, and Meyer and Charlton. Chartered were rather weaker at 36s. 6d., and Bechs. at a small loss. The same weakness prevailed among diamonds, both De Beers and Jagers slightly receding. A pronounced calm ruled in the South African market on Wednesday, the department being overshadowed by the great activity prevailing elsewhere. Gold shares were especially dull, slight declines occurring in Cities, Durbans, Langlaagtes, Knights, Robinsons, Meyer and Charlton, Van Ryn, Afrikander, and some few more. United Roodepoort reacted 1/16. Worcesters were much easier, relapsing to 3½. Geldenhuis Estate, on the other hand, were in strong favour, advancing 1/16 to 5 1/16, and there were minor improvements in Crown Reef, Ferreira, Nigel, May, and Buffelsdoorn. Shebas hardened to 29s. 3d. on the announcement of another dividend of 1s.—the final one for the year. Diamond shares were very flat, De Beers receding to 16 1/16, but in Land shares there was a small revival. Chartered closed 9d. to the good at 37s. 3d., Consolidated Gold Fields, and Oceana remained strong. Explorings also improved, but Zambesias were depressed. On Thursday the South African Market was somewhat given to dulness. Chartered and Bechs. vacillated doubtfully, and eventually closed at the same figure on Wednesday. Diamonds were similarly disposed. Gold shares were off colour. Rand Mines fell ¼, and there were slight declines in Primrose, Robinson, Orion, Village Main Reef, Wolhuter, Buffelsdoorn, and a few other Witwatersrand shares, including Geldenhuis Estate, which lost 1/16 of what they gained yesterday. Worcester, on the other hand, recovered, and there were small rises in Meyer and Charlton, Jubilee, Grahamstown, May, Van Ryn, and Champ d'Or Deep. Kaffirs have been fairly strong during to-day, but the influence of the greater activity in the Miscellaneous Market has told upon them. Chartered have vacillated a good deal, and have closed rather weak. Diamonds have been stronger. Jagersfontein went up 17s. 6d.; but De Beers are unchanged.—Risen: African Gold Recovery, 2s 6d.; Agnes Block, 2s.; Central Zouts., 3d.; De Beers, 2s. 6d.; Exploration, 2s. 6d.; Grahamstown, 1s.; Griqualand West, 2s. 6d.; Harmony Pref., 6d.; Henry Nourse, 1s. 3d.; Johannesburg Estates, 1s.; ditto Pioneer, 5s.; Jubilee, 15s.; Klerksdorp, 3d.; Moodies, 2s.; New Jagers, 17s. 6d.; Read's Drift, 6s.; Roodepoort (Kimberley), 6d.; South Simmer and Jack, 1s. 3d.; Spes Bona, 1s. 6d.; United Roodepoort, 5s.—Fallen: Afrikander, 1s. 3d.; Balkis Land, 3d.; Bantjes, 1s. 6d.; Bechuanaland, 6d.; Block B, 6d.; Buffelsdoorn, 1s.; Champ d'Or, 1s. 3d.; Chartered, 6d.; City and Suburban, 5s.; Consolidated Gold Fields, 1s. 3d.; Crown, 5s.; Exploring, 2s. 6d.; Geldenhuis Main, 1s.; Heriot, 2s. 6d.; Joe's Reef, 1s.; Jumpers, 2s. 6d.; Klienfontein, 1s. 3d.; Langlaagte, 2s. 6d.; Lisbon, 3d.; Luipaards, 6d.; Mashonaland Agency, 1s. 3d.: Mozambique, 2s. 6d.; New Chimes, 1s. 3d.; ditto Crœsus, 1s. 3d.; ditto Primrose, 2s. 6d.; Nyassa, 1s. 3d.; Otto's, 3d.; Randfontein, 1s. 6d.; Rand Mines, 7s, 6d.; Rietfontein, 7s. 6d.; Southern Land (15s. paid), 6d.; Simmer and Jack, 2s. 6d.; Southern Reef, 6d.; Van Ryn, 1s. 3d.; Village, 5s.: Wemmer, 2s. 6d.; Witwatersand (Knight's) 2s. 6d.; Wolhuter, 2s. 6d.

Miscellaneous Shares.

West Australian Gold Fields absorbed nearly the whole of the interest in this market on Monday. The whole group were active, but West Australian Gold Fields were especially favoured with attention. These latter went up to 3¼ at the commencement, relapsed to a trifling extent later on, but at the finish again hardened to 3 3/16. White Feathers wavered from 2 to 2 1/16, and Bayley's Reward closed at 24s. In other directions this department of the market was dull. Ooregum Prefs. had a rise, and there was a wide demand for Callao Bis. Del Reys, Gravels, and Oritas rallied, and some business was done in Caratals, Macates, Idahos, and other low-priced shares at Saturday's prices. Golden Feather, Golden Leaf, Guston, Kaboonga, Lisbons, Harnhallis, and Poormans were rather off colour. Early on Tuesday it seemed as if a small reaction were about to take place in West Australian Gold Fields. The movement had hardly commenced, however, before buying again became extensive, and quotations resumed their late figure. Mawson's Reward closed at 1¼. Bayley's Reward hardened 6d., to 23s. 6d. bid, West Australian Gold Fields were 3⅛ buyers, closing at 3 to 3⅛, and White Feather finished at 1⅞ to 2, Hampton Lands at 2⅛, West Australian Concessions at 1⅛, Great Boulder 1/16 premium, and West Australian Explorations at 1. There was no disposition to weakness in the Wentworth group. Day Dawn Block upon the receipt of a favourable telegram went up from 5s. 9d. to 7s. 6d. Indian shares were fairly firm. Champions and Ooregum Preference attracted some attention. Among copper shares, Rio Tinto relapsed 1/16 to 16½. With the single exception—an emphatic one—of West Australian shares, the Miscellaneous Market was very languid on Wednesday. West Australian Gold Fields were the great feature, and exhibited great strength, closing at 3½. Mawson's Reward took a good jump on the day to 1 7/16. West Australian Concessions rose 1/16 to 1 1/16, and Hampton Lands were also better at 2 21-32. West Australian Exploration rose to 1/16 premium, and the Deferred shares were £25 buyers. Great Boulder changed hands at 3-32 premium, but Bayley's Reward, after having been actively dealt in at 24s. 6d., and finished at 23s. White Feather closed at 1 1/16. In other Australian shares, Broken Hill Proprietary went up to 60s. 6d., Australian Broken Hill were better at 2s. 6d., Aladdin rose 1/16 to 1 3/16, Wentworth Ordinary changed hands at 5s. 3d., and Carrington improved to 1s. 9d. Kaboonga, Kapanga, and Victory were all rather easier. Indians were quiet. Rio Tinto dropped 1/16 to 15 1/16. In this department of the market West Australians continued on Thursday to absorb most of the attention, but they were not quite so buoyant as on the preceding day. West Australian Exploration rose 1/16 to 1 1/16, Hampton Lands closed at 2 1/16, Mawson's Reward at 1⅛ bid. White Feather at 1 1/16, and West Australian Concessions at 1 1/16. Elsewhere in the Australian market Aladdin improved 1/16 to 1 3/16, Broken Hill Proprietary moved up 6d. to 61s., and New Queen hardened the turn at 5s. 6d., while Day Dawn Block and Day Dawn P.C. showed slight reactions. Mysore Gold fell 1/16 to 2⅜, and the two Nine Reefs were each 6d. to the bad. Rio Tinto declined a further ⅛. West Australians have throughout to-day monopolised nearly the whole of the business in the Miscellaneous Market. Dealings in West Australian Gold Fields, Bayley's Reward, and Hampton Lands have been upon an enormous scale, and the shares all close firm though not at their best. Indians have been dull.—Risen: Alladin's: 2s. 6d.; Argentine Concessions, 6d.; Broken Hill Proprietary, 1s. 3d.; Burma Ruby, 1s.; Cape Copper, 6s. 3d.; Callao Bis, 9d.; Carrington, 6d.; Copiapo, 1s. 3d.; Columbian Hydraulic, 6d.; Cumberland, 6d.; Day Dawn, 1s.; Don Pedro, 6d.; Fortuna. 2s. 6d.; Frontino, 1s.; Golden Gate 3d.; Gravel, 6d.; Mason, 2s. 6d.; Mosman, 3d.; Ooregum Preference, 2s. 6d.; Orita, 6d.; Rio Tinto, 3s. 9d.; Waihi Gold, 5s.; Wentworth Priority, 2s.; ditto Ordinary, 6d.—Fallen: Alaska, 2s. 6d.; Australasian, 3d.; Australian Broken Hill, 3d.; Baker's Creek, 1s. 3d.; Brilliant 6d.; ditto Block, 1s. 3d.; British Broken Hill, 6d.; Cravens, 3d.; Day Dawn P.C., 3d.; Elkhorn, 6d.; Golden Feather, 1s.; ditto Gate, 6d.; Golden Leaf, 1s. 6d.; Gold Fields of Mysore, 1s.; Harquahala, 6d.; Holcomb, 3d.; Jay Hawk, 6d.; Kaboonga, 3d.; Kangarilla, 3d.; Kapanga, 3d.; Kempinkote, 3d.; Mysore Harnhalli, 3d.; ditto West, 6d.; New Guston, 1s. 3d.; ditto Queen, 6d.; Nine Reefs (9s. 6d. paid), 3d.; ditto (fully paid), 1s. 3d.; Ooregum, 1s. 3d.; Pinos Altos, 6d.; Poorman, 6d.; South-East Mysore, 3d.; Victory, 1s.; Tharsis, 7s. 6d.

STOCK EXCHANGE SETTLING DAYS.

Settling Days on the Stock Exchange are as follow:—

CONSOLS, Thursday, October 4.

STOCKS AND SHARES.

Continuation Days.	Ticket Days.	Pay Days.
Wednesday, Sept. 26	Thursday, Sept. 27	Friday, Sept. 28
Tuesday, October 9	Wednesday, Oct. 10	Thursday, Oct. 11
Wednesday, Oct. 24	Thursday, Oct. 25	Friday, October 26

A NEW ILLUSTRATED CATALOGUE.—We have received from Messrs. Joseph Cook and Son, engineers, of the Washington Iron Works, Durham, a copy of their new illustrated catalogue of some of their leading manufactures. The book is produced in a manner which occasionally approaches to a standard of art. It is, however, above all things, an eminently practical work, and all things are made to subserve the end of conveying a clear idea of the articles produced by the firm, which, as is well-known, include most articles in use in collieries and mines. We recommend the book to the attention of all mining engineers.

DIVIDENDS ANNOUNCED.

African Gold Recovery, 10 per cent.
Alliance Assurance, 4s. per share. Payable October 10.
Armstrong Mitchell and Co., 10⅞ per cent.
Armstrong Mitchell and Co., Pref., 4 per cent.
Babcock and Wilcox, 15 per cent. Payable September 20.
Babcock and Wilcox Pref., 6 per cent. Payabel September 20.
Bristol Waterworks, 7 per cent. Payable October 15.
Bristol Waterworks Max. Ordinary, £4 18s. per cent. Payable October 15.
Brush Electrical Engineering, 5 per cent.
Brush Electrical Engineering Pref., 6 per cent.
Buenos Ayres and Rosario Railway, 2 per cent.
Burnley Paper Works, 3s. per share.
Carrizal and Cerro Blanco Railway, 10 per cent.
City of Buenos Ayres Tramways, 2s. 6d. per share.
City of Buenos Ayres Tramways, 8th issue, 1s. per share.
Commercial Gas, old stock, 13 per cent.
Commercial Gas, new stock, 10 per cent.
Continental Metropolitan Tramways, 3s. per share.
Coquimbo Railway, 5 per cent.
Dublin and Lucan Steam Tramways, 2 per cent.
Eastern Extension Telegraph, 2s. 6d. per share.
Eastern Telegraph, 2s. 6d. per share. Payable October 15.
East London Waterworks, 8 per cent.
Evered and Co., 7½ per cent.
Globe Telegraphing and Trust, 1s. 3d. per share. Payable 18th prox.
Globe Telegraph and Trust Pref., 3s. per share. Payable 18th prox.
H. Hermann, 5s. per share.
Imperial Colonial Finance and Agency Corporation, 4 per cent.
Isle of Man Railway, 4 per cent. Payable September 29.
Joint-Stock Institute, 10 per cent. Second int. div.
Kelly's Queen Block Gold, 4d. per share.
King Line, 6 per cent.
Lanarkshire and Ayrshire Railway, 2½ per cent.
London General Omnibus, 8 per cent.
Maid of Erin Silver Mine, 4 cents per share.
M'Hugh (B. and E) and Co., 2s. 6d. per share.
M'Hugh (B. and E.) and Co. Pref., 6 per cent.
New Heriot Gold Mining, 20 per cent.
Nigel Gold Mining, 15 per cent.
No. 1 South Great Eastern Gold, 2d. per share.
North British Railway, ½ per cent.
North British Railway Pref., 3 per cent.
North-Eastern of Uruguay Railway, 6 per cent.
Norwegian Trunk Railway, 7½ per cent. Payable October 1.
Pahia, Blanca, and North-Western Railway Pref., 10s. per share.
Pearson and Knowles's Iron and Coal "A," 6 per cent.
Pryce Jones, 5 per cent.
San Jorge Nitrate, 7s. 6d. per share.
Sheba Gold Mining, 1s. per share. Payable October 8.
Spiers and Pond, 4s. per share.
St. Louis Breweries Pref., 8s. per share. Payable October 1.
Tarapaca Waterworks, 10s. per share.
Taylor's Eagle Brewery, 4 per cent.
Taylor's Eagle Brewery, 7 per cent.

MINING IN CORNWALL AND DEVON:

NOTES ON WESTERN MINING, EDITORIAL AND OTHERWISE.

(BY OUR SPECIAL CORRESPONDENT.)

THAT the Polberro shareholders are pretty well satisfied as to the future prospects of the mine in connection with the anticipated junction of lodes is shown by the cheerfulness with which the last call has been paid, and the complacency with which, at Wednesday's meeting, another was made. The air of satisfaction which generally prevailed would seem to have been rather more in keeping with the declaration of a big dividend. Most of the shareholders allowed their minds to go from the present into the future, and it must be allowed that they had the most ample grounds for doing so. A consensus of opinion points to the conclusion that when the junction is reached there will be a turning point in the history of Polberro. Captain Thomas, in fact, has never met with so favourable a set of indications in his life. The only factor beyond this which can have a disturbing influence on the prosperity of the concern is the price of tin, and, even here, there seems at last to be a more favourable outlook. In another year or so we hope that these favourable forecasts may be justified by the event, and that Polberro, having had what was said to be its one requirement—a good start—may become an excellent speculation.

AFFAIRS at Dolcoath have resumed their normal condition, and it may be taken for granted that they are now making as good returns as ever they did. Unfortunately, the greater part of the quarter had gone before the mine was quite in fork, but for all that we may anticipate that the returns will show a marked increase on those of last quarter, and that there will, at all events, be a balance on the right side. The agents found on examination that the bottom of the mine was secure, and the fears which in some quarters were entertained on this score have thus been proved to be groundless. There could not be a more striking testimony to the excellence of the timber work and the efficiency of the management. The adventurers are not the only people who will welcome the completion of the work of draining the lower levels. Many of the miners have been on half time, and the moiety of a Cornish miners' wages is by no means a liberal allowance for a family.

THE machinery on Wheal Owles sett is advertised for sale, and the money subscribed has been returned. This marks the final collapse of the attempt to restart the mine, which was so pluckily undertaken by a few St. Just gentlemen, who have been engaged in a long and hopeless struggle against unfavourable circumstances. There has been a steady fall in the price of tin since the prospectus was issued, and in view of this fact, the promoters can hardly feel surprised that the investing public, who generally regard such schemes from a practical rather than a sentimental standpoint, failed to respond in sufficient numbers to the appeal which was made.

EAST POOL meeting will be held on Monday, and it is being freely suggested that there will be no dividend. We have no information as to how the returns have kept up during the quarter, but the average price has been slightly higher, and we are not aware that any extraordinary items figure on the debit side. On the face of it, therefore, there would seem to be no reason why there should not be a dividend equal to that declared at the last meeting.

WITH the uncertainty as to the future of tin, it is useless to look for any improvement in the value of mine shares, and speculators seem as little inclined to buy as ever they were. The business now doing is infinitesimal, and it would be difficult to either buy or sell shares if one felt disposed, though the prices quoted remain higher than they were when the depression was at its worst.

THE proprietor of Tregurtha Downs Mine, Marazion (Mr. Wighton) has for some time been adopting the system of stocking his tin, in the hope of a "good time coming." Doubtless the tin syndicate has at least one well-wisher in Mr. Wighton.

CAPTAIN RICHARDS, formerly manager of Tregurtha Downs Mine, has accepted an appointment as engineer under the Gold Fields of Mysore Mining Company, and has sailed for India.

NEWS FROM THE COLLIERIES.

NOTES ON THE INDUSTRY.—STATISTICS AND REFERENCES.

MR. A. SHARP, Cumberland miners' agent, has received a letter from the secretary of the Cumberland Coalowners' Association, stating that it is the intention of the coalowners to reduce wages on October 1, as follows;—10 per cent. off hewers, and 8 per cent. off all underground datal men, and that, in accordance with the promise made on August 3, the owners are willing to meet the delegates in conference at the Commercial Hotel, Workington, on the 26th inst. Mr. Sharp has instructed the lodge delegates to hold meetings among their men, so as to be prepared to attend the conference and discuss the question.

NINE hundred men struck on Thursday at Rothenbach, in the Landeshut district near Waldenburg.

THE Home Office has decided to institute prosecution against some of the authorities of the Albion Colliery, Pontypridd, in respect of offences represented to have been committed on the day of the terrible explosion in June last, by which so many lives were lost. The charges formulated have reference to shot-firing and other alleged non-compliance with the provisions of the Act. The colliers of the district are memorialising for another enquiry.

AT a meeting of the delegates of the Northumberland Miners' Association, held at Newcastle on Saturday, it was resolved that the time had come when hours of collier boys ought to be reduced, and that a committee be appointed to meet the owners and discuss the ways and means whereby this can be accomplished with the least possible harm to the country.

FROM 15,000 to 17,000 men returned on Monday to work in the collieries in the West of Scotland. Work was resumed in the majority of cases unconditionally; but, in a few collieries, on the understanding that the former rate of wages will be continued till the end of January, and that an effort will be made to establish a Board of Conciliation.

A TELEGRAM on Tuesday, from Hazelton, Pa., reported that 14 men have been entombed through an explosion in the workings of the Honeybrook Mine.

LEWIS MINING INVESTMENT TRUST (LIMITED).—The statutory meeting was held at the office of the company, on Saturday, the 15th September. The notice convening the meeting having been read, the Chairman, Mr. Eschwege, mentioned that this meeting was purely formal and called in compliance with the Companies' Act, which renders it compulsory to call the shareholders together within 4 months after registration. There was no special business to transact, but no doubt the shareholders would like to hear a few particulars about the present position and future prospects of the Trust, and on this Mr. Burnett, the managing director, would be pleased to enlighten them.—Mr. Burnett, in referring to the subscribed capital, said that subscriptions were coming in well, and the shares were being placed with good people in all parts of Great Britain; and to this distribution of the shares the management were paying particular attention, as they look for considerable support from their shareholders, when they had a property to be underwritten. Too much importance could not be attached to this point, as in the case of the Trust bringing out a company for public subscription, each shareholder would, figuratively speaking, become an agent and naturally a source of great strength to the success of the flotation. Referring to the present financial position he was pleased to say that it was in a very sound condition, and he hoped in the course of a month or six weeks to declare an interim dividend of not less than 10 per cent. It was the intention of Mr. Bush to proceed to Johannesburg immediately, in order to relieve Mr. Lewis, who will then come to London with a valuable block of claims situated in a splendid position on the Rand, and of which he had a very high opinion. This property should be successfully floated by the Trust, which would mean at least 100 per cent. dividend. There could be no doubt as to the splendid work Mr. Lewis had done and was doing on behalf of the Trust, and, so far, without remuneration. It was the intention of the management to make proper provision for him.—Mr. Eschwege then handed in his resignation as a director. In doing so, he stated that it was not owing to any want of faith in the Trust or its management. He gave every credit to Messrs. Burnett and Bush for the energetic manner in which they had worked and were still working in the interests of all concerned, and he anticipated a most successful future under their management. His real reason for resigning was that they had differences of opinion on business matters, and he thought when directors could not work unanimously it was better to resign. The differences were purely of a business nature. In conclusion, he might say that in Messrs. Burnett and Bush they had two gentlemen in whom they could place every confidence.

THE STOCHIOMETRY OF THE IONS.—An important contribution to our knowledge of ion migration appears in the *Zeitschrift fur Physikalische Chemie*, xiii., pp. 191—288, under the signature of G. Bredrig. After reviewing all that is definitely known about this migration, the author gives a table for the conversion of the conductivity value of a solution at various degrees of dilution into that at infinite dilution; this depends only on the product of the valencies of the ions and not on their nature, and its validity is shown by a comparison of calculated numbers with those obtained by Kohlrausch. To the available data which Bredrig collects, he adds a large number of conductivity numbers obtained from his own investigations, more especially in the case of organic bases, the conductivity of about 150 substances having been determined by means of an alternating current and telephone. In all, about 300 substances were available for discussion. From these data, using the value of Nernst and Loeb for the velocity of the silver ion, the velocities of about 300 ions are calculated, and then by means of the table the conductivity of the substance. In almost all cases the agreement between these numbers and those found experimentally is very good. The ion velocities are in all cases given in mercury units, so that for conversion into C.G.S. units they have to be multiplied by 110 by 10^7. From these results Bredig deduces the following relations: The velocity of the elementary ions is a periodic function of the atomic weight, the curve being also very closely analgous to that for internal friction. In complex ions the velocity is largely and additive property, isomeric ions of analogous constitution have equal velocities, and to a continuous additive change in the composition of the ion corresponds a continuous but decreasing change in the velocity. In general a retarding effect on the velocity is produced by substitutions. A number of these are given, and there are some interesting reflections at the close of the paper of a more strictly chemical nature.—*Electrical Review.*

MINING NOTES.

HOME, COLONIAL, AND FOREIGN.

A CORRESPONDENT of the Buenos Ayres *Standard*, who has been making a tour of inspection of the Chubut-Andine district, concludes his communication as follows:—"Late in the afternoon of the same day I left my colonial friends. I arrived at Messrs. Evans, Langley, and Griffith's, of the Corintos Gold Mines, and got a hearty welcome from the above gentlemen. I remained several days with them, during which time they showed me all over their ground, and I must say I was struck with the great amount of work which they have before them. They undoubtedly have dropped on an immense quantity of gold, for in bank after bank as I washed the gravel to test it I found gold, and they should lose no time in putting down a hydraulic plant, as I am sure the result would be immense. From here it is a day's journey to the Teca Gold Fields. Here also I was heartily welcomed, and shown all the work that has been done, and which, by the way, has been testing both alluvial and reef. Here there seems an unlimited extent of gold bearing country; in fact, in every stream and every bank of gravel that I tried I found gold, and, as an experienced gold miner, I have no hesitation in saying that these properties have a very prosperous future before them. I have brought up two samples from the Teca Gold Mines. Although small samples, the quality is first class, and at a glance any experienced man can see, with the extent which I have mentioned, there is a great future for the Teca Gold Fields."

MR. MURRAY, the Government Geologist of Victoria, has been interviewed in regard to the Coolgardie gold field. Asked for a scientific opinion as to the general nature of the field he said;—"Well, I think I can give you that in a few words. The reefs are large, and show every indication of permanency." "Are you one of those who think that the field will become the biggest gold-producing area in the world?" he was asked. "I am only in a position to speak of the country in the immediate neighbourhood of Coolgardie," he replied, "It is certainly very rich, but I have seen as rich stone in Victoria. I do not believe in making invidious comparisons between different fields. So far as the mines at Coolgardie are developed they show great wealth. As for their permanency, I do not think there is any reason for croaking."

THE Transvaal's First Raad has passed the Sunday law, which is to come into operation as soon as it has been published in the *Staats Courant*. Under this law, as now revised, pumping at the mines on Sunday is permitted, as is also any absolutely necessary repairing work. Mr. Carl Jeppe pointed out that if mills shut down on Sundays there would be a loss to the mining industry of about £350,000 per annum. Mr. Jeppe's suggestion has been carried out in the following clause:—"That the running of mills for the purpose of crushing quartz be permitted, except where the same could be proved to be a public nuisance, and providing no extra labour was required."

VICE-CONSUL MILWAIN reports from Carthagena that the lead exports were 69,000 tons last year, or about 5600 tons less than in the previous year. The fall is really greater than at first sight it appears, as the low price of silver has materially lessened the amount desilverised there. This should tend to stiffen the home lead markets.

ASSUMING that the south reef and main reef leader alone prove payable, and that the milling width of each of these two reefs is 2 feet, Mr. J. Harry Johns estimates that the life of the Wemmer property is eight years on the present milling basis. If, in addition, the main reef prove to be payable throughout, say, for a width of 4 feet, the life of the mine would be about 15 years.

MESSRS. Donald Currie and Co.'s steamer *Hawarden Castle*, which sailed on the 19th from Cape Town, took gold to the value of £84,000.

THE Lydenburg district of the Transvaal turned out 5731 ounces in July, as compared with only 2643 ounces in the corresponding period of last year.

THE cost of treating tailings by the new Siemens-Halske electrical process of the Rand Central Ore Reduction Company is stated at 3s. per ton, including 10d. for filling and discharging the vats and 6d. for cyanide consumed. This cost has been tested by actual working for four months, and with a cyanide plant of 6000 tons to 8000 tons capacity it is hoped that the treatment can be carried out for 2s, 6d. per ton. The Rand Central Ore Reduction Company, the agent of Messrs. Siemens and Halske, of Berlin, is said to be desirous of a very small royalty—say, 3 per cent.

THE following are the gold statistics for the Bendigo and Ballarat districts for the past fortnight: Bendigo, total yield, 5650 ounces; dividends declared, £4725. Ballarat, total yield, 7624 ounces; dividends declared, £5550.

SOLDERING ALUMINIUM.—Those who have occasion to use aluminium, either in their private experimenting or as a building material, for which, as it seems to us, it is destined to have many applications, may like to know how to solder it with the tools usually within an amateur's reach. As everyone who has anything to do with aluminium knows, it is considered very difficult to solder. Ordinary solder when melted runs over it like mercury on a glass plate, and cannot be persuaded to stick to the surface of the metal by any of the usual methods. No flux known will help the matter any, for the reason that the oxide of aluminium which covers the surface in a thin film, is insoluble in any re-agent which will not attack either the metal itself or the solder. There are plenty of recipes, in accordance with which those who are willing to pay $1 a pound for "aluminium solder," and an extra price for "shop rights," may have the privilege of trying to make the "solder" stick to the aluminium, but amateurs will generally find it quite sufficient to use ordinary block tin for solder, and secure its adherence to the surface of the aluminium by rubbing the metal through the solder, which is melted upon it by a spirit lamp or a Bunsen burner, with a wire brush, which removes the oxides so effectually that the melted tin can be spread over the aluminium almost like paint. The best brush to use is one made of bits of aluminium wire, wound with wire, or set in a handle, but steel or hard iron wire will answer. After both the surfaces to be united have been "tinned" in this way, they are held together, and heated until the tin melts. The joint is so strong that the aluminium will sometimes break before it will separate from the solder; and, as block tin is very fusible, the work is easily managed by amateurs. Ordinary plumbers' solder, which contains a large amount of lead, should not be used. Lead has a curious repulsion for aluminium, and, although solder containing it can with difficulty be made to attach itself, by means of the wire brush, the joint would be unreliable. If it is desired to harden the solder, silver may be added. It will dissolve readily in the melted tin, and the resulting alloy, which is harder and somewhat less fusible according to the proportion of silver than the pure tin, can be spread with the wire brush with the same facility.—*Engineer and Iron Trades' Advertiser.*

BLACKETT'S CLAIM GOLD MINING COMPANY (LIMITED).—This company, of which we published some particulars a few weeks ago, has, we are officially informed, been successfully floated, the capital having been largely over-subscribed.

A NEW TELEGRAPH CODE.—A new telegraph code, specially designed for the use of public companies by Mr. Willink, who is secretary of several important companies, is in course of publication. An important feature of this code is that it will contain some 10,000 sentences which do not appear in existing codes, and it may, therefore, be used in conjunction with them. It is the outcome, we understand, of many years of experience of the needs of public companies in this direction, and the sentences comprised are useful ones. The publishers are Messrs. Crowther and Goodman, of 133, Fenchurch-street.

THE METAL MARKETS.

LONDON METAL MARKET.

THE METAL MARKET, LONDON, SEPTEMBER 21.

Copper

THE statistics for mid-September show a slight decrease in the visible supplies of copper. The G.M.B market has again been active, and the turnover has considerably exceeded even that of last week, this week's public transactions having amounted to nearly 4000 tons. The opening values were £41 12s. 6d. cash G.M.B.'s, and £42 three months—a rise of nearly 15s. per ton upon the previous week's close. The market continues to improve until, on Thursday, £42 1s. 3d. s.c. and £42 10s. three months were paid. A slight reaction then took prices back to £41 17s. 6d. three months, the market closing to-night quiet at £41 10s. to £41 11s. 3d. s.c., and £41 15s. to £41 16s. 3d. three months. The demand for manufactured copper and refined sorts has also been much better, and higher prices have been paid all round. In America prices have gone up considerably during the week, and the reports from that quarter state that the demand there for copper for electrical purposes has now become very large again. There are rumours of serious *pourparlers*—originating on the other side—for a renewal of the combination amongst producers for the restriction of output and of exports to Europe, though at present these rumours await confirmation.

Tin.

The most salient feature of the week under review has been the daily buying of tin, prompt or early delivery, for the United States, where, in spite of the circulars written by the New York correspondent of the London "bear"—warning people against the article—there seems to be an increasing consumption of and demand for tin. The values here have—despite a considerable relapse from the best of the week—gained ground over last Friday's closing price to the extent of 10s. per ton. The market opened on Monday strong at £73 5s. three months, a rise of 22s. 6d. per ton, and touched £73 10s., the turnover for the day amounting to about 500 tons. On Tuesday three months and spot rose to £74, about 300 tons changing hands. On Wednesday this price was again paid for both position, a half-a-crown less being taken near the close, whilst the transactions for the day reached about 275 tons. On Thursday the market was quieter, only 175 tons being done, and as low as £73 10s. being accepted. To-day we had a fall of about a pound, the market closing quiet but steady at £72 10s. to £72 12s. 6d. s.c., and three months. In the Dutch market Billiton rose from 44½ fl. s.c. to 44¾ fl., and closes at 44½ fl. Banca closes at 44¾ fl., a rise of one florin over the week.

Pig Iron.

The Glasgow market, after opening firm at 43s. 11½d. cash Scotch, and rising to 44s. 1d., has gone flat, and closes at 43s. 4d. buyers of cash. Hematite and Cleveland close respectively at 44s. 4½d. and 36s. 3d. Scotch shipments last week were 2263 tons—*i.e.*, 3305 tons under those of the corresponding week of last year.

Lead

is dull, and closes easier at £9 15s. to £9 17s. 6d. soft foreign and £10 English.

Spelter

is quiet at £15 7s. 6d. to £15 10s. ordinaries, and £15 10s. to £15 12s. 6d.

Antimony

is firm at £32 to £33, with nothing new to report.

Quicksilver

has advanced again, and closes firm at £6 15s. firsts and £6 12s. seconds.

The following are to-night's (September 21) prices of metals;—

	£ s. d.	£ s. d.
Copper.		
Tough cake and ingot	44 5 0	44 12 6
Best selected	44 15 0	45 7 6
Sheets and sheathing	—	54 0 0
Flat bottoms	—	57 0 0
Chili bars, spot, & 3 months respectively	41 10 0	41 15 0
Copper tubes, seamless	—	0 0 7½
Alloys.		
Brass: Wire	—	0 0 5¾
Tubes (solid drawn)	—	0 0 6
Sheets	—	0 0 5¾
Phosphor Bronze: Alloys II.	—	78 0 0
" " III. or V } Cog Wheel Brand	—	81 0 0
" " VII. }	—	83 0 0
" " XI.	—	78 0 0
" " Vulcan brand A1	—	72 0 0
Duro Metal	—	73 0 0
Bull's Metal	—	65 0 0
Ferrobronze (Vivian's).		
Ingots ...per lb.	0 0 5¾	—
Ordinary sheets, plates, bolts and bars	0 0 6½	—
Screw bolts and nuts	0 0 7½	—
Pump rods, plain	0 0 6½	—
" finished	0 0 9½	—
Delta Metal: No. 4 (per ton)	—	73 10
" Sheets and plates (perib.)	0 0 10½	—
" Bars, round, square, flat (per lb.)	0 0 9½	—
" " hexagon (per lb.)	0 0 9	—
Tin.		
English, ingots, f.o.b.	75 5 0	76 5 0
" bars	76 5 0	77 5 0
" refined	77 5 0	78 5 0
Straits, spot and 3 months respectively	—	72 10 0
Australian spot, and three months respectively	—	72 15 0
Banca " (in Holland)	75 0 0	75 2 6
Tin Plates: Charcoal, best quality per box	0 13 6	0 18 0
" " ordinary	0 11 9	0 12 6
" Coke, best quality	0 10 9	0 11 0
" " ordinary	—	0 10 3

These prices of tinplates are f.o.b. at Swansea; at Liverpool 6d. per box more.

Iron.		
Pig, G.M.B., f.o.b., Clyde, spot	—	2 3 6
" Scotch pig, No. 1 Gartsherrie	—	nominal
" " Coltness	—	2 19 0
" " Clyde	—	nominal
" " Govan	—	2 5 6
Bars, Welsh, f.o.b. Wales	—	5 2 6
Plates "	—	—
Bars, Staffordshire, at works	—	5 5 0
Sheets " "	—	6 10 0
Plates " "	—	6 5 0
Hoops " "	—	5 12 6
Ship plates, Middlesborough	—	—
Steel: English spring, according to quality	10 0 0	12 0 0
" " cast	42 0 0	58 0 0
" Rails at works, according to section	3 12 6	4 15 0
Lead.		
Spanish or soft foreign	9 15 0	9 17 6
English pig, common	—	10 0 0
" L.B.	—	10 10 0
" sheet and bar	—	11 0 0
" pipe	—	11 10 0
" red	—	12 5 0
" white	—	16 10 0
" patent shot	—	14 0 0
Spelter.		
Silesian ordinary brands	15 7 6	15 10 0
" special brands	15 10 0	15 12 6
English Swansea	16 0 0	16 2 6
Sheet Zinc	18 15 0	19 0 0
Antimony.		
Antimony	32 0 0	33 0 0
Quicksilver.		
Flasks, 75 lbs. warrants	6 12 0	6 15 0
Manganese.		per unit.
Ore, c.i.f., U.K. ports		
1st quality, 50 per cent. and upwards	0 0 10½	0 0 11¼
2nd " 47 per cent. to 50 per cent.	0 0 9	0 0 10
3rd " 40 " 47 per cent.	0 0 8	0 0 9
Aluminium.		Per lb.
98–99½ per cent. (guaranteed 98 per cent. min.)	in ingots (1 cwt. lots)	0 1 9½
do do	(1 ton lots)	0 1 9
Nickel.		
98–99 per cent. guaranteed	0 1 5	0 1 6

THE production of gold of the Rada Mine, Transylvania, for the month of August amounted to 44,504 grammes.

"THE MINING JOURNAL" SHARE LIST.

ABBREVIATIONS AND REFERENCES.—The following are the significations of the abbreviations and references which occur in the Share List:—*Ay*, Antimony; *A*, Arsenic; *Bl*, Blende; *Bx*, Borax; *C*, Copper; *D*, Diamond; *G*, Gold; *I*, Iron *L*, Lead; *M*, Mundic; *N*, Nitrates; *P*, Phosphates; *Q*, Quicksilver *R*, Ruby; *S*, Silver; *S-l*, Silver-lead; *Sul*, Sulphur; *T*, Tin; and *Z*, Zinc. * in the "called up" column of British Mines, signifies that the mine is conducted on "Cost Book" principles; ‡ in the "Head Office" column of African Mines, signifies that the address given is not that of the head office, but of a sub- or transfer office and †, following the names of African mines, signifies that they are subject to the Limited Liability Law of the South African Republic.

The following is by far the most complete and comprehensive list of mines, in whose shares business is being currently transacted, published. Additions will be made from time to time as occasion requires. Every effort is made to ensure accuracy, and Secretaries of Companies, Share dealers, and our readers generally, are cordially invited to co-operate with us to this end, by notifying us of any errors that may at any time occur. We desire it to be understood that, while our Share List will almost invariably be found correct; we do not hold ourselves responsible for any loss or inconvenience that may arise from possible inaccuracies.

BRITISH MINES.

Name.	Closing Price, Sept. 21, 1894	Closing Price, Sept. 14, 1894.	Par.	Latest Dividend	Called up Per Share.	Amount of Stock or No. of Shares Issued	Situation of Mine.	Head Office
			£ s.		£ s. d.			
Atlas ...T	—	—	1 0	—	1 0 0	12,000	Devon	Camborne.
Blue Hills ...CT	5/- 10/-	5/-	*	2/- May, '81	5 12 6	5,353	Cornwall	Camborne.
Botallack ...T	1 1¼	1	*	—	51 4 6	1,880	Cornwall	St. Just.
Carn Brea ...T	6¾ 7¼	6¾	*	2/6 Dec., '93	21 18 5	6,000	Cornwall	Carn Brea.
Cook's Kitchen ..T	2/6 7/6	2/6	*	—	35 15 10	4,900	Cornwall	Camborne.
Cumberland ...L	—	—	1 0	5% May, '88	1 0 0	61,588	Cumberland	7, Angel-court E.C.
Derwentwatr. CLZ	—	—	1 0	—	1 0 0	10,050	Cumberland	Manchester.
Devon Gt Cons. CA	20/- 25/-	20/-	5 0	3/- May, '94	2 0 0	10,240	Devon	8, Finsbury-circus.
Dolcoath ...T	70½ 71½	70	*	12/6 Apr. '94	9 12 6	4,700	Cornwall	Camborne.
Drakewalls CTM	-/3 -/6	-/3	0 5	—	0 2 0	61,856	Cornwall	Dashwood House.
EastGrassington L	—	—	1 0	—	1 0 0	20,995	Yorkshire	5, Copthall-buildings
East Pool ...AT	8½ 9	8¾	*	1/6 June,'94	0 9 9	6,400	Cornwall	Illogan.
Gawton ...CA	—	—	2 10	—	2 7 0	12,000	Devon	20, Great St. Helens.
Great Laxey ...L	1 2	1	4 0	5/- Apr., '92	4 0 0	15,000	Isle of Man	Douglas, Isl of Man.
Green Hurth ...L	1/3 1/9	1/3	1 0	-/6 June '89	0 19 0	32,000	Cumberland	Newcastle.
Halkyn ...L	—	—	1 0	2/- June, '94	1 0 0	10,000	Flintshire	Chester.
Hexworthy ...T	—	—	1 0	—	1 0 0	14,634	Devon	6, Queen-street-place
Isle of Man ...L	—	—	5 0	5/6 Sep. '93	5 0 0	14,000	Isle of Man	Chester.
Killifreth ...T	2¾ 3	2¾	*	2/- July,'94	5 11 6	6,000	Cornwall	Truro.
Leadhills ...L	12/6 17/6	17/6	6 0	3/- Sep. '92	6 0 0	20,000	Lanarkshire	30, Finsbury-circus.
Levant ...CT	—	—	*	2/6 July, '94	11 9 6	2,560	Cornwall	Penzance.
Lovell ...T	—	—	*	1/3 Nov., '91	1 18 7	7,165	Wendron	3, Gt. Queen-st., S.W.
Minera ...L	—	—	5 0	5/6 Mar. '90	5 0 0	9,000	Denbighshire.	Minera, N. Wales.
Nenthd&Tndle. LZ	-/6 1/-	-/6	1 0	6% Feb., '91	0 18 0	48,8[illegible]5	Northumberld	Newcastle-on-Tyne
New Balleswidd'n T	—	—	1 0	—	1 0 0	25,000	Cornwall	St. Clement's Ho., E.C
NewCooksKitn. TC	—	—	*	—	10 18 3	4,900	Cornwall	Camborne.
New Minera ...	—	—	1 0	1/- Oct., '92	1 0 0	30,000	North Wales	6, Queen-street-place.
Phœnix United TC	1/- 3/-	1/-	*	1/- Mar. '90	7 4 6	10,665	Cornwall	Liskeard.
Polberro ...T	20/- 25/-	20/-	*	—	3 7 9	18,000	Cornwall	37, Walbrook.
So. Condurrow TC	10/- 15/-	10/-	*	3/6 Apr. '93	7 12 1	8,123	Cornwall	20, Great St. Helens
South Crofty TA	1¼ 1½	1¼	*	—	17 7 6	6,120	Cornwall	Pool, Cornwall.
S. Frances Untd. T	15/- 20/-	15/-	*	—	2 7 6	6,000	Cornwall	Redruth.
Tincroft ...T	11¾ 12¼	11¾	*	2/- Aug. '94	15 7 6	6,000	Cornwall	Carn Brea.
Weardale ...L	7/-	7/-	4 0	1/3 Oct. '90	1 10 0	50,000	Durham	3, Lombard-court.
West Frances ...T	1½ 2	1½	—	2/6 May, '89	16 0 7	6,144	Cornwall	Camborne.
West Kitty ...T	6¼ 7	6¾	*	3/- Aug. '94	1 2 0	6,000	Cornwall	37, Walbrook.
Wheal Agar ...TA	2¼ 2½	2¼	*	2/6 Aug. '88	23 5 2	6,000	Cornwall	Redruth.
Wheal Basset ...TC	1 1¼	1	*	10/- Apr.'88	12 3 0	6,144	Cornwall	Redruth.
Wheal Friendly ..T	-/6 1/-	-/6	*	—	0 12 9	10,000	Cornwall	110, Cannon-st., E.C.
Wheal Grenville T	17½ 18¼	18	*	5/- Aug. '94	18 2 0	6,000	Cornwall	7, Union-court, E.C.
Wheal Kitty ...T	12/6 17/6	12/6	*	3/- Mar. '88	4 5 6	8,590	Cornwall	Truro.
Wheal Metal &F. T	⅜ ⅝	⅜	*	—	0 13 9	10,784	Cornwall	14, Broad-street Av.

AUSTRALIAN AND NEW ZEALAND MINES.

Achilles Gld Fld.	2/6 3/6	2/6	1 0	—	1 0 0	80,307	New Zealand	3, Church Pas., E.C.
Aladdins Lamp G	1 1/16 1 3/16	18/9	1 0	1/- Apr. '94	1 0 0	100,000	N. S. Wales	4-6, Throg. Avenue.
Amana (Went.) G	—	—	1 0	—	1 0 0	75,000	N. S. Wales	5, Throg. Avenue.
Amana (Went.) G	—	—	1 0	—	0 12 6	25,000	N. S. Wales	5, Throg. Avenue.
Anglo-Saxon ...G	—	—	1 0	2/- July, '89	1 0 0	51,000	Queensland	4, Lombard-court.
Australasian ...G	1/9 2/3	2/-	1 0	-/6 Mar., '92	1 0 0	210,000	Queensland	6, Queen-st. place
Australian ...C	—	—	20 0	1/6 July '94	7 7 6	18,315	So. Australia	15, Old Jewry Chbrs.
Aus. Bro. Hill Con.	2/- 2/6	2/3	1 0	1/- June, '91	1 0 0	537,138	N. S. Wales	Winchester House.
Baker's Creek ...G	1 3/16 1 5/16	1¼	1 0	1/- Sept. '94	0 17 6	160,000	N. S. Wales	Hillgrove, N.S.Wales
Bayley's Reward G	22/6 23/6	21/-	1 0	-/4 Aug. '94	1 0 0	480,000	W. Australia	2, Met. Ex. Buildings
Blue Spur & G. G.	-/6 1/-	-/6	1 0	—	1 0 0	80,098	New Zealand	6, Gt. St. Helens'
Bonnie Dundee G	3/3 3/9	3/3	1 0	—	0 18 0	120,000	Queensland	3-5, Gracechurch-st
Do. Pref.	—	—	1 0	2/- May, 94	1 0 0	7,268	Queensland	3-5, Gracechurch st.
Brilliant ...G	11/6 12/6	12/-	2 0	-/3 Aug. '94	2 0 0	250,000	Queensland	Charters Towers.
Brilliant Block ...G	1 5/16 1 7/16	1¼	2 0	-/9 Aug. '94	2 0 0	250,000	Queensland	3, Gracechurch-st.
Brilliant, St. Geo.	16/- 18/-	16/-	0 10	3d. Aug. 94	0 6 3	72,000	Queensland	Charters Towers.
Brit. Brok. Hill S	4/- 5/-	4/6	5 0	—	5 0 0	240,000	N. S. Wales	Dashwood Ho., E.C.
Broken Hill Prop.	3 3⅛	2⅞	0 8	1/- Aug. '94	0 8 0	960,000	N. S. Wales	Dashwood Ho., E.C.
Brkn. Hill P. Bl.10	—	—	10 0	1/- Feb. 94	9 13 0	100,000	N. S. Wales	117, Leadenhallst. EC‡
Brkn. Hill P. Bl.14	—	—	5 0	—	5 0 0	10[illegible],000	N. S. Wales	117, Leadenhallst. EC‡
Carrington ...G	1/6 2/-	1/-	12/6	—	0 12 6	100,007	Queensland	9, Tokenhouse Yard.
Craven's Cal. ...G	4/- 4/6	4/3	0 6	-/3 June 94	0 4 8	100,000	Queensland	30-1, S. Swithin's-le.
Croydon King B. G	—	—	0 5	—	0 5 0	60,000	N. Queensland	Leadenhall Big. E.C.
Cumbrind (New) G	1/3 1/9	-/9	1 0	2/6 Dec. '87	1 0 0	184,890	Queensland	Blomfield House E.C
DayDawn B.&W. G	6/6 7/6	6/-	1 0	-/6 Mar. 93	1 0 0	498,400	Queensland	3-5, Gracechurch-st.
Day Dawn P. C. G	3/6 4/-	3/9	1 0	-/6 Apr. '92	1 0 0	490,000	Queensland	Winchester Ho., E.C
Eaglehawk ...G	1/- 1/6	1/-	1 0	—	0 19 6	120,000	Victoria	31, Lombard-street.
Eng. & Aus. Cor. Cu	1/16	1/16	2 0	2% 1883	1 17 6	70,000	So. Australia	136, Palmerston-blds
Eng. & Aus 6% Deb.	—	—	50 0	6% July, '94	50 0 0	700	So. Australia	136, Palmerston-blds
Etheridge ...G	—	—	0 5	—	0 5 0	324,290	Queensland	6-7, Queen-street-pl.
Frederick the Gt G	—	—	1 0	—	1 0 0	125,000	Victoria	St. George's House.
Glenrock ...G	1/- 1/6	1/-	1 0	—	0 19 6	225,000	N. Zealand	3-5, Queen-st., E.C.
Great Boulder ..G	par. ½ pm.	pr. ½pm	1 0	—	0 10 0	100,000	W. Australia	3, Gracechurch st.
Golden Gate ...G	1/6 2/-	1/3	0 10	—	0 10 0	150,000	Queensland	9, Tokenhouse Yard.
Harrietville ...G	—	—	1 0	-/6 July, '90	1 0 0	146,330	Victoria	6-7, Queen-street-pl.
Kaboonga ...G	-/9 1/3	1/-	0 10	—	0 10 0	500,000	Queensland	70-71, Bishopsgate st.
Kangarilla ...S	2/3 2/9	2/6	1 0	—	1 0 0	88,275	So. Australia	68, Coleman-street.
Kapanga ...G	3/6 4/-	3/9	1 0	-/6 Jan. '91	0 19 0	250,000	N. Zealand	9, New Broad-street.
Kilkivan ...G	1/6 2/-	1/6	1 0	—	1 0 0	81,392	Queensland	4, Coleman-street.
Midas G. F. ...G	—	—	1 0	—	1 0 0	180,000	Victoria	32, Poultry, E.C.
Mills' Day Dawn G	1¼ 1⅜	1¼	1 0	-/6 Sept. '94	0 15 9	300,000	Queensland	3, Gracechurch-st.
Moruya ...GS	—	—	1 0	—	1 0 0	58,235	N. S. Wales	16, St. Helen's-place.
Mosman ...G	1/6 2/-	1/3	1 0	-/3 Jan., '94	1 0 0	185,000	Queensland	3-5, Gracechurch-st.
Mt. Leyshon ...G	-/6 1/-	-/6	1 0	-/6 Dec. '90	1 0 0	157,989	Queensland	7, Draper's-gardens.
Mountain Maid G	2/- 3/-	2/-	0 10	—	0 6 3	56,000	Queensland	Leadenhall Bldgs.
Mount Morgan G	2 1/16 2 9/16 xd	2 1/16	1 0	-/6 Aug. '9	0 17 6	1,000,000	Queensland	50, Lime-street.
Mt. Shamrock GB	—	—	1 0	—	1 0 0	275,000	Queensland	9, Tokenhouse-yard.
Mount Zeehan SL	-/6 1/-	-/6	1 0	—	1 0 0	193,257	Tasmania	Mansion Ho. Cham.
N. Smithfield ..G	—	—	0 10	3/- July, '94	0 10 0	48,000	Gympie	Queensland.
New Queen ...G	5/6 6/-	6/-	1 0	-/6 Apr., '94	0 19 6	158,915	Queensland	30, St. Swithin's-la.
No. 7 N. E. Queen	-/6 1/-	-/6	0 10	-/3 Sept. '92	0 8 9	96,000	Queensland	30, St Swithin's-ln.
PhœnixGold.Pile G	—	—	0 5	-/9 Aug. '94	0 5 0	48,000	Gympie	Gympie, Queensland
Port Phillip ...G	—	—	0 5	—	0 5 0	200,000	Victoria	57, Moorgate-st., E.C.
Queen's Bthdy Un	—	—	1 0	—	0 12 6	75,000	Victoria	7-8, Gt. Wnchster St.
Queens. Smelting	1/16 ⅛	1/16	0	—	1 0 0	36,244	Queensland	9, Tokenhouse Yard.
Scottish Australian	⅝ 1	⅝	1 0	4 4-5d. May '94	1 0 0	200,000	N.S. Wales	Winchester Ho. E.C.
Sunburst ...G	—	—	0 10	-/6 Mar. '92	0 10 0	150,000	Queensland	9, Tokenhouse Yard.
Tasmanian Crown	—	—	1 0	—	1 0 0	125,990	Tasmania	8, Old Jewry, E.C.
Tipperary ...G	—	—	1 0	—	1 0 0	35,000	N. Zealand	3-5, Queen-st., E.C.
True Blue ...G	—	—	1 0	-/3 July, '94	1 0 0	53,000	Australia	Leadenhall Blg. E.C.
Victoria Associatn.	—	—	1 0	-/3 Aug. '94	1 0 0	144,000	Char. Towers	8, Crosby-square
Victory ...G	5/- 7/-	6/-	0 5	-/6 Mar., '94	0 5 0	200,000	Queensland	32, Gresham-st., E.C
Waihi ...G	2 3/16 2 15/16	1 15/16	1 0	1/- June '94	1 0 0	150,000	New Zealand	11, Abchurch-'n. E.C
Wentworth Ord. G	3/- 6/-	4/6	1 0	—	1 0 0	350,000	N. S. Wales	4-6, Throgmort. Av.
Went. Priority ...G	14/- 16/-	12/-	1 0	6/- Jan. '93	1 0 0	150,000	N. S. Wales	4-6, Throgmort. Av.
W. Argentine ...G	-/9 1/3	-/9	1 0	—	0 19 6	150,000	N. Zealand	3-5, Queen-street.
W. Aust. Concessn	1 9/16 1 11/16	1⅝	1 0	—	1 0 0	25,000	W. Australia	33, Old Broad st., EC
W.Australian G.F.	2¼ 2⅜	2⅜	1 0	—	1 0 0	} 65,000	W. Australia	28-29, S. Swithin's-ln.
W.Australian G.F.	—	—	1 0	—	0 4 0		W. Australia	28-29, S.Swithin's-ln.
Zeehan Montana S	—	—	1 0	8d Aug., 94	1 0 0	66,000	Tasmania	11, Queen Victoria st
Zeehan Montana S	—	—	1 0	5d Aug., 94	0 12 6	12,600	Tasmania	11, Queen Victoria st

EUROPEAN MINES.

Alamillos ...L	10/- 15/- xd	10/-	2 0	-/6 Sept. '94	2 0 0	35,000	Spain	6, Queen-street-place
Avala ...Q	0 ⅜	0	1 0	1/- May '93	1 0 0	150,047	Servia	4, Tokenho. Bldgs.
Consett Ore ...I	5¾	5¾ xd	1 0	5/- July '94	1 0 0	55,200	Spain	19, Grey-st., N'castle.
English Cr. Spelter	⅜ ⅝	⅜	1 0	2½% Aug. '94	1 0 0	84,000	Lombardy	9, Queen-street-place
Fortuna ...L	15/- 20/-	12/6	2 0	1/- Sept. '94	2 0 0	25,000	Spain	6, Queen-street-place
Libiola ...C	3¼ 3½ xd	3⅜	5 0	2/6 Aug. 94	5 0 0	50,400	Italy	Dashwood Ho., E.C.
Linares ...L	3¼ 3¾ xd	3⅜	3 0	6/- Sept. '94	3 0 0	14,998	Spain	6, Queen-street-place
Mason & Barry ...C	2⅞ 3⅜	2¾	5 0	2/- May. '94	5 0 0	185,172	Portugal	87, Cannon-street.
Oscar ...G	—	—	5 0	—	0 4 6	117,240	Norway	6A, Austin Friars.
Pestarena ...G	4/3 4/9	4/3	3 0	—	3 0 0	67,[illegible]00	Italy	6-7, Queen-street-pl.
Pontgibaud ...L	—	—	20 0	11/5 Dec. '93	20 0 0	14,000	France	6-7, Queen-street-pl.
Rio Tinto ...C	15⅜ 15¾	15 7/16	10 0	7/- May, '94	10 0 0	325,000	Spain	30, St. Swithin's-lane
Do. (Mort. Bonds)	104 106	104	100 0	5% July, '94	100 0 0	£1892,740	Spain	30, St. Swithin's-lane
Do. (2nd do.)	102 104	102	100 0	5% July, '94	100 0 0	£1024,860	Spain	30, St. Swithin's-lane
Do. (3rd do.)	100 102	100	100 0	5 p.c. July, 94	100 0 0	£587,080	Spain	30, St. Swithin's lane
Ripanji ...SQ	12/- 14/-	12/-	1 0	—	0 19 0	95,000	Servia	120, Bishopsgt-st. Wn.
Tharsis ...C Sul	5 5¼	4⅝	2 0	12½% Mar. '94	2 0 0	625,000	Spain	Glasgow.
West Prus Pre. pref	—	—	10 0	8% June '94	10 0 0	365	Germany	Walbrook Ho., E.C.
West Prussian Pre.	—	—	10 0	8% June, '94	10 0 0	5,450	Germany	Walbrook Ho., E.C.
West Prussian Or.	—	—	10 0	8% June, '94	10 0 0	14,050	Germany	Walbrook Ho., E.C.
Wohlfahrt ...L	—	—	1 0	3% June, '94	1 0 0	99,634	Prussia	17, Victoria-st., S.W.
Wohlfahrt ...	—	—	1 0	3% June, '94	0 10 0	9,000	Prussia	17, Victoria-st., S.W.

INDIAN AND ASIATIC MINES.

Name.	Closing Price, Sept. 21, 1894	Closing Price, Sept 14, 1894.	Par.	Latest Dividend.	Called up per Share.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office.
			£ s.		£ s. d.			
Asia Minor Pref. Sl.	—	—	0 10	—	0 10 0	42,430	Asia Minor	2, Metal Ex. Bldgs.
Do. Ord. ...	—	—	0 10	—	0 9 0	51,584	Asia Minor	2, Metal Ex. Bldgs.
Balaghat Mysore G	7/- 8/-	7/-	1 0	—	0 18 0	160,000	India	6-7, Queen-street-pl.
Burma Ruby ...R	4/- 5/-	3/-	1 0	—	0 17 0	300,000	Burmah	Suffolk House, E.C.
Champion Reef ...G	3 11/16 3 13/16 xd	3 11/16	1 0	2/- Aug. '94	1 0 0	200,000	India	6-7, Queen-street-pl.
Colar Central ..G	-/7½ -/10½	-/6	1 0	—	1 0 0	200,000	India	Dashwood Ho., E.C.
Coromandel ...G	1/6 2/6	1/6	1 0	—	0 12 6	95,000	India	6-7, Queen-st.-place.
DevaIa Moyar ...G	—	—	1 0	—	1 0 0	200,000	India	34, Nicholas-lane.
Gemming&Mining	—	—	2 0	—	1 7 6	19,594	Ceylon	183, Gresham House.
GoldFldsMysore G	21/- 23/-	22/-	1 0	1/- July '92	1 0 0	220,000	India	6-7, Queen-street pl.
Gold Flds Siam G	—	—	1 0	—	1 0 0	150,000	Siam	19, St. Swithin's-lane.
Hyderabad Dec. ..	—	—	10 0	—	10 0 0	115,000	Deccan	16, St. Helen's-place.
Kempinkote GdFd	3/9 4/3	4/-	0 5	—	0 3 6	665,473	India	6-7, Queen-st.-place.
Mysore ...G	2 11/16 2 13/16	2 11/16	1 0	2/- July, '94	1 0 0	250,000	India	6-7 Queen-street pl.
My. Harnhalli ..G	2/- 2/6	2/3	1 0	—	0 12 0	100,000	India	2, East India Avenue
Mysore Reefs ...G	9/- 10/-	9/-	1 0	—	1 0 0	134,788	India	6-7, Queen-street-pl.
Mysore West (N) G	8/- 9/-	8/6	1 0	—	0 18 0	127,408	India	Dashwood Ho., E.C.
Mysore Wynaad G	8/- 9/-	8/-	1 0	—	0 18 0	250,000	India	Dashwood Ho., E.C.
Nine Reefs ...G	3/6 4/-	4/-	0 10	—	0 10 0	50,000	India	6-7, Queen-street-pl.
Nine Reefs ...	3/9 4/3	3/9	0 10	—	0 9 6	200,000	India	6-7, Queen-street-pl.
Nundydroog ...G	1⅝ 1¾	1 11/16	1 0	1/- Mar. '94	1 0 0	200,000	India	6-7, Queen-street-pl.
Ooregum (Df. O.) G	3 1/16 3 5/16	1⅛	1 0	4/6 July, '94	1 0 0	145,000	India	6-7, Queen-street-pl.
Do. (10% Pref.)	3⅜ 4⅛	3⅜	1 0	4/- July, 94	1 0 0	95,536	India	6-7, Queen-street-pl.
Do. (10% Pref.)	3 3¼	3	1 0	4/- July '94	0 5 0	24,464	India	6-7, Queen-street-pl.
Pahang Corpn. T	7/- 8/-	7/-	1 0	15% Apr. '89	1 0 0	203,070	Malay Penin.	Blomfield Ho., E.C.
Pahang Kabang T	1/16 3/16	1/16	1 0	—	1 0 0	394,760	Malay Penin.	4a, Jeffrey's sq., E.C.
South E. Mysore G	4/3 4/9	4/6	0 4	—	0 4 0	134,623	India	6-7, Queen-street-pl.

NORTH AMERICAN MINES.

Alaska Mexican ...G	—	—	$5	—	$5	180,000	Alaska	30, St. Swithin's-ln.
Alaska Treadwell G	3¾ 4	3⅞	$25	1/6 July, '94	$25	200,000	Alaska	30, St. Swithin's-ln.
Almada and T... S	-/3 -/9	-/3	2/6	—	0 2 6	351,008	Mexico	6, Queen-street-place
American Belle ...S	2/- 2/6	2/-	1 0	-/6 Mar. '91	1 0 0	398,890	Colorado	25A, Old Broad-street
Anglo Mexican ...S	—	—	5 0	3/- Jan. '90	5 0 0	74,850	Mexico	23, College Hill.
Arizona (Pref.) Cu	10/- 10/3	9/-	4 0	—	4 0 0	158,920	Arizona	74, Geo.-st., Edinbor'
Do. 10% Deben.	59	58	100 0	7% May '94	100 0 0	2,660	Arizona	74, Geo.-st., Edinbor'
Big Creek ... Ay.	—	—	1 0	1/- Dec. '91	1 0 0	50,000	Nevada	2, Pancras-lane, E.C.
California ...G	—	—	0 10	-/6 May 90	0 8 9	129,571	Colorado	St. George's Ho. E.C.
Canadian Phos. P	—	—	1 0	-/6 Nov., '90	1 0 0	73,334	Canada	155, Fenchurch-st.
Colorado Boy ...S	—	—	1 0	—	1 0 0	112,491	Colorado	Abchurch-chbrs. E.C
Cortes ...S	—	—	1 0	3% Feb. '93	1 0 0	300,000	Nevada	Suffolk House, E.C.
Decatur ...Sl.	—	—	1 0	—	1 0 0	32,500	Colorado	35, Queen Victoria-st.
Do. (Pref.)	—	—	1 0	—	1 0 0	12,500	Colorado	35, Queen Victoria-st
De Lamar ...GS	18/- 19/- xd	18/-	1 0	1/- June '94	1 0 0	400,000	Idaho	6, Draper's-gardens.
Dickens Custer GS	-/3 -/6	-/3	1 0	—	0 19 9	420,000	Idaho	Winchester Ho. E.C.
Elkhorn ...S	14/- 15/-	14/6	1 0	1/- Sept. '94	1 0 0	175,007	Montana	6, Draper's-gardens.
Emma ...S	-/2 -/4	-/2	0 5	—	0 5 0	403,618	Utah	15, Geo-st, Mansn. Ho
Flagstaff ...S	—	—	1 0	—	0 18 3	240,000	Utah	Dashwood Ho., E.C
Fisk ...G	—	—	1 0	6d May, 94	1 0 0	134,000	Colorado	5, Fenchurch st.
Garfield ...GS	—	—	1 0	-/6 Dec. '88	0 19 6	98,185	Nevada	Suffolk House, E.C.
Golden Feather G	8/6 9/6	9/6	1 0	—	1 0 0	180,000	California	8, Stephens Cs E.C.
Golden Gate ...G	4/6 5/6	5/-	1 0	—	0 19 6	79,600	California	St. Stephens Cs E.C.
Golden Leaf ...G	3/- 3/6	4/6	1 0	—	1 0 0	200,259	Montana	8, Draper's Gardens.
Golden Valley ...G	—	—	1 0	—	1 0 0	55,507	Colorado	15, Angel Court.
Harquahala ...G	5/6 6/6 xd	6/-	1 0	-/9 June '94	1 0 0	300,000	Arizona	6, Draper's Gardens.
Holcomb Valley G	-/6 -/9	-/9	0 5	—	0 5 0	540,000	California	14, Cornhill, E.C.
Idaho ...GS	1/9 2/3	1/9	0 5	—	0 4 8	143,439	Idaho	140, Leadenhall-st.
Jackson Goldfields	-/6 1/-	-/6	5 0	—	0 5 0	408,635	California	11, Poultry, E.C.
Jay Hawk ...G	5/6 6/6	6/-	1 0	-/6 Dec. '92	1 0 0	285,000	Montana	Dashwood House.
Kohinoor "B" GS	—	—	1 0	-/6 June, '81	1 0 0	112,901	Colorado	Blomfield Ho., E.C.
La Plata ...S	-/3 -/6	-/4½	0 5	1/3 Oct. '82	0 4 3	405,000	Colorado	11, Poultry, E.C.
La Yesca ...GS	—	—	1 0	—	0 18 0	76,015	Mexico	20, Bucklersbury, EC
Maid of Erin ...S	—	—	1 0	4c.p.sh Sept'94	1 0 0	575,000	Colorado	43, Threadneedle-st.
Mammoth Gold ..	-/3 -/6	-/3	1 0	—	1 0 0	400,000	Pinal Arizona.	257, Winchester Ho.
Mesq. d'l Oro (P) G	—	—	5 0	—	5 0 0	10,000	Mexico	Dashwood Ho., E.C.
Mesq. d'l Oro (D) G	—	—	5 0	—	5 0 0	10,000	Mexico	Dashwood Ho., E.C.
Montana ...GS	14/6 15/6	11/6	1 0	5% April '91	0 19 0	657,158	Montana	Gresham House, E.C.
New Colorado ...S	—	—	1 0	—	0 17 0	65,000	Colorado	Abchurch Cham. E.C
N. Consolidated SC	—	—	0 5	—	0 3 6	248,576	Nevada	15, Angel-court, E.C
N. Gold Hill ...G	-/2 -/4	-/2	1 0	—	0 19 9	191,045	N. Carolina	15, George-st., E.C.
New Guston ...S	12/6 15/-	13/9	1 0	1/- Oct. '92	1 0 0	110,000	Colorado	25A, Old Broad-st.
New Hoover Hill G	—	—	0 10	-/9 Dec. '85	0 10 0	120,000	N. Carolina	Langthorne Ho., E.C
New London ...G	—	—	2/6	—	0 2 6	327,816	New Carolina	55, Bishopsgt.-st. Wn
Palmarejo ...GS	1/3 1/9	1/3	1 0	—	1 0 0	418,888	Mexico	4, Copthall-buildings
PinosAltos (Df) GS	6/- 7/-	6/6	1 0	-/6 Mar.' 90	1 0 0	100,000	Mexico	110, Cannon-street.
Do. 15% Cum Pref	—	—	1 0	—	1 0 0	60,000	Mexico	110, Cannon street.
Pittsbg Con. (N) G	—	—	1 0	1/6 Mar. '88	1 0 0	77,147	Nevada	Suffolk House, E.C
Poorman Con. GS	2/3 2/9	2/9	0 5	—	0 5 0	273,948	Idaho	5, Copthall-b'gs. E.C
Red Mountain ...S	—	—	1 0	—	1 0 0	46,686	Colorado	11, Poultry, E.C.
Richmond ...GSL	7/6 10/-	7/6	5 0	1/- Sep. '93	5 0 0	54,000	Nevada	44, Coleman-street.
Ruby ...GSL	—	—	0 5	—	0 5 0	221,371	Nevada	22 St. Mary Axe.
Sierra Buttes ...G	7/- 9/-	7/-	2 0	-/6 Apr. '94	2 0 0	122,500	California	138, Leadenhall-st.
Do. Plumas Eur. G	11/3 13/9	11/3	2 0	-/9 Apr. '94	2 0 0	140,265	California	138, Leadenhall-st.
Springdale ...G	1/6 2/-	1/6	$1	2d Aug., 94	$1	1,000,000	Colorado	20, Abchurch Lane.
Twin Lake Placers	—	—	1 0	1/3 Mar. '94	1 0 0	24,584	Colorado	5, Lawrence P. Hl. E.C
United Mexican S	1/- 1/6	1/-	1 0	2/6 May, '87	1 0 0	906,654	Mexico	3, Gt. Winchester-st.

SOUTH AND CENTRAL AMERICAN MINES.

Anglo-Chilian Pf N	5¾ 6¼	5¾	10 0	—	10 0 0	35,000	Antofagasta	123, Bishops.-st. W.
Do. 6% Rylst MB	93 96	92	100 0	—	100 0 0	£200,000	Antofagasta	123, Bishops.st. W.
Antio. (Pref.) G.S.	—	—	1 0	-/6 Mar. '90	1 0 0	22,820	Colombia	184, Gresham Ho.
Antioquia (ordiny)	—	—	1 0	—	1 0 0	42,453	Colombia	184, Gresham Ho.
Callao Bis ...G	1/6 2/-	-/9	1 0	—	1 0 0	316,248	Venezuela	50, Old Broad-street
Camarones ...C	—	—	2 0	—	2 0 0	67,000	Chili	123, Bishopsgt. Wn.
Caratal ...G	-/7½ -/10½	-/9	2/6	—	0 2 6	1,330,000	Venezuela	57, Moorgate-st. E.C
Caylloma ...S	—	—	2 0	1/- Apr. 94	2 0 0	125,000	Peru	52, Leadenhall street
Colon ...G	-/7½ -/10½	-/9	1 0	—	1 0 0	200,000	Colombia	5, Copthall-bdgs., E.C.
Colorado Nit. ...N	3 3½	3	5 0	4% June, '94	5 0 0	32,000	Chili	19, King-st., Liverp'l.
Colombia ...G	—	—	20 0	10 frs. Aug. 94	20 0 0	—	Venezuela	Ciudad, Bolivar.
Colombian Hy ...G	13/- 14/-	12/6	1 0	1/- Sept. '94	1 0 0	75,000	Colombia	10, Blomfield-street.
Copiapo ...C	2 2⅛	1 15/16	2 0	1/6 June '94	2 0 0	100,000	Chili	DashwoodHouse, E.C
Darien ...G	—	—	1 0	—	1 0 0	71,359	Colombia	Manchester.
Don Pedro ...G	5/- 6/-	4/6	1 0	—	0 16 6	133,102	Brazil	24-5, Devonsh. Cs E.C
El Callao ...G	10/- 15/-	10/-	5 0	9½d Feb. '94	5 0 0	257,600	Venezuela	8, Bishopsgt.-st., Wn.
Frontino & B. ...G	23/- 25/- xd	22/-	1 0	1/- Sept., '94	1 0 0	128,662	Colombia	184, Gresham House.
Glenrock ...G	1/- 1/6	1/-	1 0	—	0 18 6	199,948	Argen. (& Ind)	3-5, Queen-street, E.C
Glenrock (Pref.)	—	—	1 0	—	0 16 0	16,232	Argen. (& Ind)	3-5, Queen-street, E.C
Gravel ...G	5/6 6/6	5/-	1 0	—	0 19 6	100,000	Colombia	10, Blomfield-street.
Guadalupe ...GS	3/6 5/-	3/6	1 0	—	1 0 0	120,000	Honduras	11A, Unionct. OldBrdst
Huanchaca ...S	171¼ frs.	171¼	5 0	3/9 Oct., '93	5 0 0	320,000	Bolivia	10, Avnu. d'Alma, Paris
Javali ...G	—	—	0 2	8½% '91	0 2 0	105,234	Nicaragua	139, Cannon-street.
Julia Nit. ...N	5/- 5/6	—	5 0	—	5 0 0	30,000	Chili	79½, Gracechurch-st.
Julia Taltal ...N	—	—	1 0	—	0 19 0	200,000	Chili	79½, Gracechurch-st.
Lagunas ...N	11/16 13/16 pm	½	5 0	—	5 0 0	180,000	Tarapaca	3, Gracechurch st.
Lautaro ...N	6⅜ 6⅞	6⅞	5 0	5/- Jan. 94	5 0 0	110,000	Chili	70, Gracechurch st.
Liverpool ...N	11 12	10½	5 0	10/- Feb. '94	5 0 0	22,000	Chili	Liverpool.
Loma ...G	1/- 1/3	1/-	1 0	—	1 0 0	300,000	Colombia	5, Copthall-building
London Nit. ...N	3 3½	3¼	3 0	3/4½ Nov. '89	5 0 0	10,000	Chili	9, Gracechurch-st.
London Nit. (Pref.)	4½ 5	4	5 0	5/- May, '94	5 0 0	22,000	Chili	9, Gracechurch-st.
Macate ...	2/6 3/-	2/6	0 2	—	0 2 0	200,000	Peru	11, Old Broad-st, E.C
New Tamarugal N	1/16 5/16	1/16	1 10	2½p.c. July '94	1 10 0	130,000	Tarapaca	50, Lime-street, E.C
Do. 8% Cum Pref	⅞ 1	⅞	1 10	8 p.c. July '94	1 10 0	130,000	Tarapaca	50, Lime-street, E.C
Do. 6 p.c. Debs ...	81 83	80	100 0	6 p.c. July '94	100 0 0	£260,000	Tarapaca	50, Lime-street, E.C
Orita ...G	2/- 2/6	1/-	1 0	1/- April '89	1 0 0	30,000	Colombia	10, Blomfield-street.
Ouro Preto ...G	—	—	1 0	—	0 16 6	80,000	Brazil	6, Queen-street-place
Pac. & Jazpampa N	5 5¼	4½	5 0	—	5 0 0	72,000	Tarapaca	3, Gracechurch-st.
Panulcillo ...C	—	—	2 0	1/- Nov. '89	2 0 0	112,500	Chili	13, Great St. Helens.
Primitiva ...N	3⅛ 4	3⅛	5 0	20% Oct. '89	5 0 0	40,000	Chili	Liverpool.
Quebrada ...	6/- 7/-	6/-	3 0	5% Mar. '92	3 0 0	241,956	Venezuela	38, Nicholas Lane.
Quebrada ...	—	—	Stk.	6% Feb., 94	100 0 0	£400,000	Venezuela	38, Nicholas Lane.
Rosario ...N	5⅜ 5⅞	5⅜	5 0	3/6 Feb. '94	5 0 0	120,000	Chili	57½, Old Broad-street.
Rosario (5% Deb.)	105 107	103	100 0	6% Apr. '94	100 0 0	£475,000	Chili	57½, Old Broad-street.
St. John del Rey G	29/- 31/-	29/-	1 0	10% June '92	1 0 0	272,435	Brazil	28, Tower-chmbrs, E.C
San Donato ...N	2⅛ 2	2	5 0	—	5 0 0	32,000	Chili	12, King-st., Liverp'l.
San Jorge ...N	6⅜ 7	6¼	5 0	7/6 Sept. '94	5 0 0	75,000	Chili	9, Gracechurch-st.
San Pablo ...N	4⅛ 4½	4⅛	5 0	7½% Apr., '94	5 0 0	32,000	Chili	3, Gracechurch-st.

"THE MINING JOURNAL" SHARE LIST—(Continued).

SOUTH AND CENTRAL AMERICAN MINES—(Continued).

Name.	Closing Price, Sept.21,1894	Closing Price, Sept.14, 1894.	Par.	Latest Dividend.	Called up Per Share.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office.
			£ s.		£ s. d.			
Santa Barbara ...G	—	—	0 10	1/3 Dec. '86	0 10 0	80,000	Brazil	Liverpool
Santa Elena ..... N	1⅜ 1⅜	1⅜	5 0	5/- Nov. '93	5 0 0	22,000	Tarapaca	3, Gracechurch-st.
Santa Rita ......N	4⅜ 4½	4⅜	5 0	15% Apr., '94	5 0 0	20,000	Chili	Dashwood House, E.C
San Sebastian ...N	2⅝ 2⅜	2⅝	5 0	1/6 May '94	5 0 0	29,000	Chili	Dashwood House, E.C
Segovia ......G	—	—	5 0	—	0 4 0	160,000	Colombia	5, Copthall-buildings
Sucre Pref......G	—	—	1 0	10% July '94	0 15 0	840	Colombia	23, St. Swithin's ln.
Sucre Ord.......G	—	—	1 0	8% July '94	1 0 0	10,000	Colombia	23, St. Swithin's ln.
Tetuan ......G	—	—	1 0	—	0 19 6	200,000	Colombia	5, Copthall-buildings
Tolima "A" ......S	8¼ 8¾xd	8¼	5 0	10% Aug. '94	5 0 0	14,000	Colombia	18, Finsbury-circus.
Do. "B" ......S	7 7½xd	7	5 0	10% Aug. '94	5 0 0	6,000	Colombia	18, Finsbury-circus.
Vic. & Altam.ra ...	—	—	0 5	—	0 5 0	200,000	Venezuela	Broad-st. Avenue.
West Indian......G	—	—	0 5	—	0 5 0	700,000	San Domingo	49, Queen Victoria-st.
Zaruma ......G	—	—	0 5	—	0 5 0	261,422	Ecuador	1, Gt. Winchester-st.

AFRICAN MINES.

Name.	Closing Price, Sept.21,1894	Closing Price, Sept.14, 1894.	Par.	Latest Dividend.	Called up Per Share.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office.
Afrikander ...... G	1¼ 1⅜	1 5/16	1 0	—	1 0 0	40,000	Transvaal	19, St. Swithin's-lane
Agnes Block..... G	10/- 12/-	8/-	1 0	—	1 0 0	78,507	Transvaal	54, Old Broad-street.
Alexandra Estate G	5/6 6/6	5/6	1 0	—	1 0 0	225,000	Witwatersrd.	Warnford Court, EC‡
Appantoo...... G	—	—	1 0	—	1 0 0	71,000	West Coast	9, New Broad-street.
Aurora......... G	5/- 7/-	5/-	1 0	5% Mar. '93	1 0 0	65,000	Witwatersrd.	8, Old Jewry.‡
Aurora West, New G	4/- 6/-	4/-	1 0	5% Mar., '93	—	80,000	Witwatersrd.	1, Crosby Square.‡
Balkis Eersteling G	-/7½ -/10½	-/9	0 10	—	0 9 6	520,000	Transvaal	85, Gracechurch-st.
Balkis Land	1/9 2/3	2/-	0 10	—	0 10 0	520,000	Transvaal	85, Gracechurch-st.
Banket......... G	-/9 1/3	-/9	1 0	—	1 0 0	200,000	Witwatersrd.	Johannesburg.
Bantjes Reef ...... G	12/6 13/6	14/-	1 0	—	1 0 0	83,000	Witwatersrd.	Warnford-court.†‡
Barrett......... G	3/- 3/6	3/-	0 10	—	0 9 0	207,496	De Kaap	17, Basinghall-street
Bechuanaland Exp	25/6 26/6	26/-	1 0	—	1 0 0	200,000	Bechuanaland	19, St. Swithin's-lane
Block "B" Lang.	7/- 8/-	7/6	1 0	—	1 0 0	535,000	Witwatersrd.	8, Princes-st., E.C.‡
Booysen Land . G	7/- 9/-	7/-	1 0	—	0 11 0	95,000	Transvaal	8, Princes st., E.C.‡
Do. Pref......	--	—	1 0	8% Mar., 94	0 10 0	71,174	Transvaal	4, Tokenhouse-blds.
Brit. S. A. Char. ...	36/9 37/3	37/-	1 0	—	1 0 0	2,000,000	S. Africa	19, St. Swithin's-lane
Buffelsdoorn ..... G	26/- 28/-	27/-	1 0	—	1 0 0	250,000	Potchefstroom	8, Old Jewry.
Buluwayo Synd. ..	1 1¼pm	1	1 0	—	1 0 0	12,000	Matabeleland	10, Helen's Place.
Cape Copper C	1⅝ 1¾	1 13/16	2 0	1/3 June '94	2 0 0	300,000	Cape Colony	9, Queen-street-place.
Do. 6% Pref.	2 2⅛	1 15/16	2 0	1/3 June '94	2 0 0	45,000	Cape Colony	9, Queen-street-place.
Cen. Montrose... G	1/- 2/-	1/-	1 0	—	0 18 6	69,000	Transvaal	15, George st. Mn. Ho.
Champ d'Or ..... G	2 9/16 2 11/16	2⅝	1 0	—	1 0 0	116,016	Witwatersrd.	8, Old Jewry, E.C.
Champ d'Or Deep G	13/6 14/6	13/6	1 0	—	1 0 0	275,000	Witwatersrd.	Fox st., Johannesbrg
City and Suburb. G	15⅝ 15⅞	15⅞	1 0	25% Mar. '94	1 0 0	75,000	Witwatersrd.	1, Crosby Square.‡
Coetzeestroom ...G	1/- 2/-	1/-	0 5	—	0 5 0	140,000	De Kaap	105, Leadenhall-street
Con. Bultfontein D	26/6 27/6	26/6	1 0	5% Nov. '89	1 0 0	721,500	Griqualand W	62, Lombard-st.
Con. Deep Levels G	2 2¼	2	1 0	4/- June '94.	1 0 0	187,250	Transvaal	30, St. Swithin's-lane.
Con. G. Fields S A.	2 5/16 2 7/16	2⅜	1 0	10% Nov. '93	1 0 0	1,250,000	S. Africa	8, Old Jewry.
Do. 5½% Deben..	101½ 102½	100	5 0	5½ July, '94	5 0 0	600,000	S. Africa	8, Old Jewry.
Crown Reef ......G	8⅜ 8⅝	8⅜	1 0	25% May '94	1 0 0	120,000	Witwatersrd.	23, Austin Friars.‡
De Beers Consol. D	16¼ 16¾	16⅜	5 0	12/6 June '94	5 0 0	789,791	Transvaal	62, Lombard-street.
Do. 5½% 1st Deb..	103½ 104½	103	100 0	5½% Feb. '94	5 0 0	£1,875000	Transvaal	62, Lombard-street.
Do. 5½% Bul. Ob.	104½ 105½	104	100 0	5½% Apr. '94	5 0 0	£720,100	Transvaal	62, Lombard-street.
Durban Roodept. G	6 6¼	6⅛	1 0	3/- Sept. '94	1 0 0	£125,000	Witwatersrd.	28, Leadenhall-bldgs
East Rand......... G	13/6 14/6	13/6	1 0	—	1 0 0	570,000	Witwatersrd.	170, Winchester-ho.
Evelyn ......G	—	—	1 0	10% Jan. '89	1 0 0	66,000	Witwatersrd.	28, Old Jewry, E.C
Exploration	1⅛ 1⅜	1	1 0	1/- Dec. '93	0 4 0	148,000	S. Africa	30, S. Swithin's-ln.‡
Exploring Co.	4⅝ 5⅞	4⅞	1 0	25/- Feb. '94	1 0 0	69,350	S. Africa	19, S. Swithin's-ln.
Ferreira ......G	8⅛ 8¾	8½	1 0	100% June '94	1 0 0	45,000	Witwatersrd.	29, Holborn Viaduct.‡
Forbes Reef (Nw) G	3/- 5/-	3/-	1 0	—	0 19 0	105,000	De Kaap	45-6, Leadenhall-st.
Geldenhuis Deep G	4 4¼	4	1 0	—	1 0 0	265,000	Transvaal	30, St. Swithin's-lane.
Geldenhuis Est. G	5⅛ 5⅜	5⅛	1 0	20% Mar. '94	1 0 0	187,500	Witwatersrd.	29 & 30, Hol. Viaduct.
Do. Main Reef	12/6 13/6	13/6	1 0	—	1 0 0	150,000	Witwatersrd.	Warnford-court, E.C‡
George and May G	17/6 20/-	17/6	1 0	—	—	112,750	Witwatersrd.	Warnford Court, E.C
George Goch ...G	—	—	1 0	—	1 0 0	100,000	Witwatersrd.	Johannesburg.
Glencairn ......G	34/- 35/-	34/-	1 0	5 p c Aug. 94	1 0 0	200,000	Witwatersrd.	2, Drapers-gardens.
Gold Estates T....G	3/6 4/6	3/6	1 0	15% Dec.'89	0 10 0	130,000	Transvaal	46, Queen Victoria-st
Gld. Fls. Deep...G	13/16 ⅞	13/16	1 0	—	1 0 0	600,000	S. Africa	8, Old Jewry.
G. F. of Mashonld.	13/9 16/3	15/9	1 0	—	1 0 0	200,000	Mashonaland	19, St. Swithin's ln.
G.F. Tierrad' Fuego	2/9 3/-	2/1½	0 4	—	0 4 0	400,000	Mozambique	2, Tokenhouse Bldgs.
Grahamstown . G	10/6 11/6	9/6	1 0	—	1 0 0	150,000	Witwatersrd.	14, Throgmorton-st.
Graskop ...... G	1/9 2/3	1/9	0 5	2½% Mar. '92.	0 5 0	500,000	Lydenburg	85, Gracechurch-st.
Griqualand W....D	6⅞ 7⅛	6¾	10 0	4% March '94	10 0 0	105,700	Transvaal	62, Lombard-street
Henry Nourse ...G	3¾ 3⅞	3 11/16	1 0	—	1 0 0	100,000	De Kaap	Warnford-court.
Joe's Reef ......G	4/- 5/-	5/-	1 0	—	1 0 0	57,404	De Kaap	11, Queen Vic.-st.
Johannesburg Pnr	3⅜ 4⅛	3⅜	1 0	12½% Nov., '93	1 0 0	21,000	Witwatersrd.	Johannesburg.
Jubilee ......G	6⅛ 6⅜	5⅜	1 0	30% Aug. '94	1 0 0	30,000	Witwatersrd.	8, Old Jewry.†
Jumpers ......G	4½ 4¾	4⅝	1 0	30% June '94	1 0 0	100,000	Witwatersrd.	29, Holborn Viaduct‡†
Kimberley ....D	3/16 5/16 pm	3/16	1 0	—	0 10 0	98,672	Kimberley	19, Finsbury-circus.
Kimberley Rdpt....	10/- 11/-	10/-	1 0	—	1 0 0	125,000	Kimberley	2, Drapers-gardens.
Kleinfontein (N) G	1⅜ 2	1 15/16	1 0	—	1 0 0	150,000	Witwatersrd.	8, Old Jewry.
Klerksdorp ......G	1/3 1/9	1/-	1 0	—	1 0 0	150,007	Transvaal	110, Cannon-street.
Koffyfontein......D	11/16 13/16	—	1 0	—	0 5 0	50,000	Jacobsdaal	4, Bishopsgate street

AFRICAN MINES—(Continued).

Name.	Closing Price, Sept.21,1894	Closing Price, Sept. 14, 1894.	Par.	Latest Dividend.	Called up Per Share.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office.
			£ s.		£ s. d.			
Langlaagte Est. G	4¼ 4½	4⅜	3 0	12½% June '94	1 0 0	467,000	Witwatersrd.	59, Holborn Viaduct.‡
Do. Royal	3⅜ 3½	3¼	1 0	5% Sept. '93	1 0 0	100,000	Witwatersrd.	2, Drapers-gardens.‡
Lisbon-Berlyn .. G	2/6 3/-	2/3	2/6	—	0 2 6	889,233	Lydenburg	110, Cannon-street.
London & S. A. Ex.	10¾ 11¼	10¾	0 10	3/- June '94	0 10 0	100,000	S. Africa	19, Finsbury-circus.
Luipaards Vlei Est.	8/- 9/-	8/6	1 0	6% Mar. '90	1 0 0	319,003	Witwatersrd.	Warnford-court.‡
Do. do. do.	⅛ ¼	⅛	1 0	—	0 10 0	25,000	Witwatersrd.	8, Old Jewry.
Main Reef (New) G	8/- 10/-	9/-	1 0	—	0 10 0	300,000	Witwatersrd.	8, Old Jewry.
May Con. (New) G	1 1/16 1 3/16	1 1/16	1 0	—	1 0 0	430,000	Witwatersrd.	4, Lothbury.‡
May Deep Level G	—	10/-	1 0	—	1 0 0	146,000	Witwatersrd.	33, Cornhill, E.C.
Mashon. Agency...	⅛ ¼ pm	15/-	1 0	—	0 10 0	100,000	Mashonaland	8, Old Jewry, E.C.
Mashon. Central...	—	—	1 0	—	1 0 0	200,000	Mashonaland	8, Old Jewry, E.C.
Matabeleland	—	—	12/6	—	0 12 6	79,889	Matabeleland	73, Basinghall St, E.C.
Metropolitan (N) G	17/6 20/-	17/6	1 0	—	1 0 0	75,000	Witwatersrd.	1, Crosby Square.‡
Meyer & Charl....G	5⅝ 6⅛	5⅝	1 0	25% June '94	1 0 0	71,687	Witwatersrd.	Warnford-court.‡
Mines Trust	⅝ ¾	⅝	1 0	3% May '94	1 0 0	82,774	So. Africa	130, Winchester Ho.
Modderfontein . G	1⅝ 1⅞	1⅝	1 0	—	1 0 0	200,000	Witwatersrd.	Warnford-court.‡
Montrose......... G	⅝ ¾	⅜	1 0	3/- Feb. '90	1 0 0	70,000	De Kaap	65, New Broad-street
Moodies G.&E....G	9/6 10/6	7/6	1 0	-/4 May '90	1 0 0	240,000	De Kaap	8, Old Jewry.‡
Mozambique........	13/9 16/3	17/-	1 0	—	1 0 0	400,000	S. E. Africa	Broad-street House.
Namaqua C	18/9 21/3	18/9	2 0	2/6 July '91	2 0 0	194,351	Namaqualand	34, Leadenhall-blds.
New Black Reef ...	—	—	1 0	—	1 0 0	76,000	Witwatersrd.	9, King William st.‡
New Chimes...... G	2 2⅛	2 1/16	1 0	10% June, '94	1 0 0	70,000	Witwatersrd.	8, Old Jewry, E.C.
New Clewer Estate	⅞ 1	⅞	1 0	—	1 0 0	100,000	Lydenburg	29-30, Holborn-viadt.
New Crœsus...... G	1 1/16 1 5/16	1¼	1 0	5% Aug. '92	1 0 0	195,000	Langlaagte	4, Bishopsgt.-st. Wt.
New Edwin Bray	—	—	7 0	—	7 0 0	65,000	De Kaap	23, College Hill
New Gordon......D	2/- 3/-	2/-	1 0	5% Dec. '89	1 0 0	560,250	Griqualand	110, Cannon-street.
New Heriot ......G	5⅜ 5¾	5½	1 0	20 p c Sept. 94	1 0 0	195,000	Witwatersrd.	1, Crosby Square.‡
New Jagersf. ....D	14⅜ 14⅝	13½	10 0	5% Mar., '94	10 0 0	100,000	Transvaal	5, Copthall-buildings
New Louis D'Or.. G	7/6 8/-	6/9	1 0	—	1 0 0	100,000	Witwatersrd.	53, New Broad-street
New Primrose ...G	4¼ 4½	4⅜	1 0	20% July '94	1 0 0	230,000	Witwatersrd.	2, Draper's-gardens.
New Rietfontein G	1¾ 2	2⅝	1 0	—	1 0 0	160,000	Witwatersrd	Warnford-ct., E.C.‡
New S. Augustine D	-/7½ -/10½	-/9	1 0	—	0 19 0	234,583	Griqualand W	30-1, St. Swithin's-ln
New Salisbury ...G	2¾ 2⅞	2¾	0 10	—	1 0 0	93,000	Witwatersrd.	1, Crosby-square.‡
New Spes Bona ...	7/6 8/6	6/-	1 0	—	1 0 0	113,801	Witwatersrd	24, N. John-st., L'pl.
N. Ophir Concess.	-/6 1/-	-/6	1 0	—	0 18 6	111,857	E. Coast Africa	31, Lombard-street.‡
New Virginia ...G	3/9 4/3	3/9	0 10	—	0 10 0	48,335	Transvaal	26, Budge-row, E.C.
Nigel .... G	3⅛ 3⅜	3⅜	1 0	15% Sept. '94	1 0 0	160,000	Witwatersrd.	1, Crosby-square.
Nooitgedacht E. G	—	—	1 0	—	1 0 0	160,000	Lydenburg	8, Old Jewry.
Oceana	1 13/16 1 15/16	1 13/16	1 0	25/- Nov. '89	1 0 0	150,000	Transvaal	4, Sun Court, E.C.
Oceana Develpmnt	½ dis par	½ dispar	1 0	—	0 5 0	50,000	Transvaal	4 Sun Court, E.C.
Orange F.S.E. ...D	4 4⅛	4	1 0	12½ Mar. '94	1 0 0	284,000	Orange F. State	10, Moorgate-street.
Orion......... G	2⅝ 3⅛	—	1 0	10% Aug. '94	1 0 0	30,000	Witwatersrd.	10, Basinghall-street
Otto's Kopje......D	2/6 3/-	2/9	1 0	—	0 19 3	437,888	Kimberley	110, Cannon-st., E.C.
Paarl Central ... G	20/- 22/-	20/-	1 0	—	1 0 0	138,750	Transvaal	29-30, Hol. Via., E.C.
Paarl Ophir ...... G	—	—	1 0	10p.c. Aug.'94	1 0 0	12,000	Tweffontein	Cape Town.
Pardy's Mozambq.	—	—	0 10	10p.c. Apr. 94	0 10 0	13,000	S. E. Africa	Broad St. Avenue.
Piggs Peak, New G	3/- 4/-	3/-	1	—	0 16 6	230,326	Swazieland	6, Queen-street-place
Potchefstoom ... G	2/- 3/-	2/-	1 0	—	1 0 0	161,000	Potchefstroom	19, Bury-st., E.C.
Princess Estate G	18/9 21/3	18/9	1 0	—	1 0 0	72,046	Witwatersrd.	33, Cornhill, E.C.
Randfontein ......G	14/- 15/-	15/6	1 0	—	1 0 0	1,916,500	Witwatersrd.	59, Holborn Viaduct.‡
Rand Mines ......G	11 11¼	11⅜	1 0	—	1 0 0	332,798	Witwatersrd.	29-30, Holborn Via.
Read's Drift ......D	16/- 18/-	10/-	1 0	—	—	50,000	Transvaal	19, Finsbury circus.
Robinson ....G	6¾ 7	6¾	5 0	5% Aug. '94	5 0 0	543,750	Transvaal	55, Holborn Viaduct‡‡
Roodepoort Un. G	3 3/16 3 5/16	2 15/16	1 0	10p.c. Aug. '94	1 0 0	100,000	Witwatersrd.	Warnford-court.‡
Sheba ....G	28/6 29/6	28/6	1 0	1/- Sept. '94	1 0 0	614,450	Lydenburg	85, Gracechurch-st.
Silati ....G	2/6 3/-	2/6	1 0	—	0 17 6	625,000	Zoutpansberg	4, Sun Court, E.C.
Simmer & Jack...G	7¾ 8	7⅞	1 0	10% May '94	1 0 0	85,000	Witwatersrd.	33, Cornhill.
Do New	—	—	6 0	—	6 0 0	45,000	Witwatersrd.	33, Cornhill.
S.A. Gold Trust ...	1⅜ 1⅝	1⅜	1 0	10% April '93	1 0 0	220,000	South Africa	8, Old Jewry.
S. Simmer & Jack G	1⅛ 1⅝	1 7/16	1 0	—	1 0 0	120,000	Witwatersrd.	31, Lombard-st., E.C.
Spitzkop (New) G	12/- 13/-	12/-	1 0	—	0 19 6	99,070	Lydenburg	15, Bishopsgt-st. Wt.
Stanhope ...... G	1⅝ 1⅞xd	1⅝	1 0	50% July. '94	—	34,000	Witwatersrd.	1, Crosby Square.‡
Sutherland R. ...G	5/3 5/9	5/9	1 0	—	0 18 6	220,000	Zoutpansberg	3, Budge-row, E.C.
Teutonia.........G	—	—	1 0	—	1 0 0	96,000	Witwatersrd.	8, Old Jewry.
Thistle Reef ...... G	-/6 1/-	-/6	0 5	—	0 4 0	150,000	Barberton	15, Angel-court, E.C.
Trans. Coal Trust...	13/6 14/6	13/6	1 0	2½% May '94	1 0 0	439,965	Witwatersrd.	Broad-st. House, E.C
Trans. Est. & Dev.	9/6 10/6	9/6	1 0	—	1 0 0	285,700	Transvaal	76, Old Broad-st. E.C.
Trans. Gold ......G	2 1/16 2½	2⅜	1 0	1/- June '94	1 0 0	250,000	Transvaal	Suffolk House, E.C.
Trans. Land......	6/- 7/-	6/-	1 0	—	1 0 0	79,915	Transvaal	Suffolk House, E.C.
Trans. Land.........	2/- 3/-	2/-	1 0	—	0 15 0	169,999	Transvaal	33, Cornhill.
Treasury.........G	—	—	1 0	7½% May '94	1 0 0	26,000	Witwatersrd.	Johannesburg.
Turffontein Est. ...	—	—	1 0	2½ Jan. 94	1 0 0	40,007	So. Africa	130, Winchester Ho.
Un. Ivy Reef......G	12/6 15/-	12/6	1 0	2½ Jan. '94	1 0 0	45,000	Transvaal	110, Cannon-street
Un. Langlaagte G	10/- 12/6	10/-	1 0	—	1 0 0	100,000	Witwatersrd.	23, St. Swithin's-ln.
Van Ryn .... G	1⅛ 1⅝	1 9/16	1 0	—	1 0 0	99,810	Witwatersrd.	1, Crosby-square.‡
Victory Hill ......G	—	—	1 0	—	1 0 0	108,000	De Kaap	Portland House, E.C.
Village Main Reef	3⅞ 4⅛	4⅞	1 0	—	1 0 0	132,000	Witwatersrd.	8, Old Jewry.
Wassau ....G	—	—	1 0	—	1 0 0	100,000	Gold Coast	147, Cannon-street.
Wemmer ....G	4⅞ 5	5	1 0	10% Nov. '91	1 0 0	55,000	Witwatersrd.	19, Bury-street.‡†
Witwatersrand G	22/6 23/6	25/-	1 0	—	1 0 0	250,000	Witwatersrd.	19, Bury-st., E.C.
Wolhuter ....G	3 3¼	3	1 0	—	1 0 0	120,000	Witwatersrd.	Warnford-court.†
Wolverand.........G	⅛ ⅜	⅛	1 0	2/- Apr., '94	1 0 0	18,750	Transvaal	5, Copthall-buildings
Wolverand......G	—	—	1 0	—	0 18 0	39,021	Transvaal	5, Copthall buildings
Worcester ....G	3¼ 3⅜xd	3¼	1 0	20% Aug. '94	1 0 0	90,727	Witwatersrd.	8, Old Jewry.‡
Zambesia Explora.	2⅜ 3	2⅜	1 0	—	1 0 0	45,000	Transvaal	13, George-st., E.C.

COAL, IRON, AND MISCELLANEOUS COMPANIES.

Name.	Closing Price, Sept.21,1894	Closing Price, Sept.14, 1894.	Par.	Latest Dividend.	Called up Per Share.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office.
			£ s.		£ s. d			
African Gold Recy	1 7/16 1 9/16	1 7/16	1 0	1/- Oct. 93	1 0 0	175,000		23, College Hill, EC
Albion Steam	11⅜ 11⅝	11⅜	10 0	10 p c Feb. 94	10 0 0	22,000	Pontypridd	6, Crosby-sq., E.C.
Aluminium, "A"	1¼ 1¾	1	1 0	2/6 Sept. 89	1 0 0	60,000		13, Abchurch Lane
Andrew Knowles...	11¾ 12¼	11¾	50 0	14s Mar. 94	35 0 0	24,400	Pendlebury	Pendlebury, nr Man.
Do do	27 31	27	50 0	7/6 July 94	50 0 0	600	Pendlebury	Pendlebury, nr Man.
Do Mort. Debts.	101 103	101	100 0	5 p c July 94	100 0 0	£125,000	Pendlebury	Pendlebury, nr Man.
Arniston	25¼	25¼	10 0	25s May 94	8 0 0	6,500	Arniston	10, S. Andw-sq Edin.
Ashbury Carr. Co.	19 22	19	50 0	28/- Oct. 92	50 0 0	3,000		Openshaw, Man.
Do do	1⅛ 2⅜	1⅛	11 0	3/3 Oct. 92	6 10 0	9,822		Openshaw, Man.
Aus. Gold Recovry	¼ ⅜	¼	1 0	...	1 0 0	180,000		23, College Hill, EC
Barrow Hem. Ord.	1¾ 2¼	1¾	7 10	...	7 10 0	150,000	Barrow-in-Fur	10, S. Swithin's-lane
Do 6 p.c. Pref. ..	4¾ 5¼	4¾	7 10	...	7 10 0	50,000	Barrow-in-Fur	10, S. Swithin's-lane
Bolckow Vaughan	12⅛ 13	12⅜	20 0	10s Mar. 94	20 0 0	81,488	York&Durhm.	16, Philpot-lane.
Do do	6⅝ 7	6⅛	20 0	6s Mar. 94	12 0 0	93,045	York&Durhm	16, Philpot-lane.
Do 5 p. c. Pref.	21¼	21¼	20 0	5 p c Feb. 94	20 0 0	23,604	York&Durhm.	16, Philpot-lane.
Cairntable	8 8⅛	8	10 0	10 p c Dec. 93	10 0 0	6,038	Scotland	100, Welling-st., Glas
Calderbank Steel&c	2 2⅛	2	10 0	2½ Oct. 91	10 0 0	15,000	Near Glasgow	63, Vincent-st., Glas
Do 6 p c Pref....	7¼ 7⅝	7¼	10 0	6 p c Oct. 91	10 0 0	10,000	Near Glasgow	63, Vincent-st., Glas
Cassel Gold Extng	15/-	14/-	1 0	17½% Dec. 93	1 0 0	168,000		108A, Hope st., Glas
Do 3rd Issue ...	7/9	7/9	1 0	...	0 15 0	30,000		108A, Hope st., Glas
Consett Iron........	20¼ 21¼	20¼	10 0	9s July, 94	7 10 0	100,000	Durham	Consett, Co. Durham
Do 8 p. c. Pref	10 10½	10	5 0	4s July, 94	5 0 0	100,000	Durham	Consett, Co. Durham
Cowdenbeath	15	15	10 0	15 p c Aug. 94	8 10 0	15,000	Fife	Cowdenbeath, Fife.
Do 5 p. c. Pref.	10⅞	10⅞	10 0	5 p c Feb. 94	10 0 0	1[illegible],000	Fife	Cowdenbeath, Fife
D. Davis and Sons	12¾ 13¼	12¾	10 0	10 p c Aug. 94	10 0 0	45,000	Rhondda	138, Leadenhall-st.‡
Ebbw Vale.........	8⅜ 9¼	8⅜	23 0	10s June 94	20 0 0	69,754	South Wales	122, Cannon-street‡
Do do	10¼ 11	10¼	23 0	10s June 94	23 0 0	4,721	South Wales	122, Cannon street‡
Fife Coal	29¾	29¾	10 0	3 p c Aug. 94	9 0 0	12,000	Fife	Leven, Fifeshire.
Fraser & Chalmers	1⅛ 1⅜	1⅛	5 0	4/- Oct. 91	5 0 0	105,000		43, Threadneedle st.
Gen. Mining Assoc.	7 7⅛	7	8 0	15/- Apr. 94	8 0 0	27,469	Nova Scotia	Bromfield House, EC
Great Western (A)	8⅛ 8¾	8⅛	5 0	6 p c Mar. 94	5 0 0	10,000	Pontypridd	35, W. Bute-st., Crdff
Do do (B)	4⅛ 5	4⅛	5 0	10 p c June 94	5 0 0	50,000	Pontypridd	35, W. Bute-st., Crdff
Great Wyrley	120	120	100 0	...	100 0 0	600	Great Wyrley	Gt. Wyrley, Walsall
Hamstead	21⅛ 22	21¼	20 0	10/- Aug. 94	20 0 0	5,000	Great Barr	Gt. Barr, nr. Birm.
Do 7½ p c Pref.	32	32¼	20 0	15/- Aug. 94	20 0 0	5,000	Great Barr	Gt. Barr, nr. Birm.
Henry Briggs (A)	13⅛ 14	13⅜	15 0	18/9 Aug. 94	12 10 0	12,965	Normanton	Whitwood, Yorks.
Do do (B)	9⅛ 10	9⅛	15 0	12/9 Aug. 94	8 10 0	11,405	Normanton	Whitwood, Yorks.
International	3¼ 3⅛	3¼	5 0	...	5 0 0	13,820	Glamorgansh	59, Mt. Strt.-sq., Crdff
J. Brown & Co. ..	15 16	14⅛	20 0	7/6 July 94	15 0 0	58,000	Yorkshire	12, Fnchch-st., EC‡
Do 5 p c Pref...	11¼ 11⅜	11¼	10 0	5 p c June, 94	10 0 0	18,000	Yorkshire	12, Fnchch st., EC‡
John Watson	12 1/16	12¼	10 0	12s May, 94	8 10 0	13,333	Lanark&Stirlg	123, Vincent-st., Glas
Do 6 p. c. Pref.	12⅛	12⅛	10 0	...	10 0 0	6,666	Lanark&Stirlg	123, Vincent-st., Glas
Lofthouse	6¾ 7	6¾	4 0	...	3 0 0	13,658	Lofthouse	Lofthouse, Yorks
Lothian Pref. ...	7	7	10 0	2½ p c May 94	10 0 0	12,500	Scotland	Newbattle Col., Dalk
Mang. Bnz. & Brass	7⅜ 8¼	...	10 0	8/- Aug. 94	6 0 0	11,951		73, Lombard st., EC
Marbella I	3⅜ 3⅝ xd	3	10 0	8/- Mar. '93	10 0 0	25,000	Spain	73, Queen Victoria-st.
Merry Cunningh.	...	...	10 0	...	10 0 0	12,500	Lanark&Renw	127, Vincent-st., Glas
Do 7 p. c. Pref.	11	11	10 0	7 p c May, 94	10 0 0	£150,000	Lanark&Renw	127, Vincent-st., Glas
Do 5 p. c. Debs.	105	105	100 0	5 p c May, 94	10 0 0	11,548	Lanark&Renw	127, Vincent-st., Glas
Morgan Cruc. Pref	12¼ 12¾	12¼	10 0	6/- Mar. 94	10 0 0	20,000		Battersea, S.W.
Nanty., Blaina Prf I	71 73	...	62 10	40/- Apr. 94	62 10 0	1,242		5, Qn. Anne's Gate.
Nerbudda Coal & In	⅛ ⅜	⅛	3 0	...	2 11 0	49,639	India	213, Gresham House
Newport Abercarn	6⅛ 7	—	10 0	3 p.c., July, 94	10 0 0	15,000	South Wales	12, Mary Axe
Do Preference	8¾ 9	8¾	10 0	6 p.c., July, 94	10 0 0	7,500	South Wales	12, Mary Axe

Name.	Closing Price, Sept.21,1894	Closing Price, Sept. 14, 1894.	Par.	Latest Dividend.	Called up Per Share.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office.
			£ s.		£ s. d.			
New Shariston Pref.	12⅛ 13¼	12⅛	20 0	10s. July, 94	20 0 0	7,500	Yorkshire	110, Cannon-st., E.C
Newton Chambers.	19 20	19	20 0	...	20 0 0	7,975	Near Sheffield	Thorncliff Ironworks
Do 6 p. c. Pref.	20¾ 21¼	20¾	20 0	...	20 0 0	7,348	Near Sheffield	Thorncliff Ironworks
New Vancour. *Coal*	⅜ ⅝	⅜	1 0	3 p c May 94	1 0 0	205,000	Brit. Columbia	12, Old Jewry Chm.
Niddrie & Benhar	41/- 42/-	40/-	1 5	2/6 June, 94	1 5 0	86,000	Near Edinbrg	4, York-bldgs., Edin.
North's Navigation	2⅛ 3	2⅛	5 0	5s Mar. 94	5 0 0	80,000	Glamorgansh.	8, Gracechurch-st.
North's 10 p c Pref	6 6⅛	6	5 0	s Mar 94	5 0 0	10,000	Glamorgansh	8, Gracechurch-st.
Otis Steel	⅛ ⅜	..	10 0	12/- Mar. 91	10 0 0	30,000		20, Threadneedle st.
Do. Pref....	⅛ 1⅛	...	10 0	8/- July 93	10 0 0	20,000		20, Threadneedle st.
Parkgate Iron	34 36	34	100 0	30s June, 94	75 0 0	3,000	Yorkshire	Park Gate, Yorks
Pearson Knowles A	48 50	48	50 0	6 p c Sept. 94	50 0 0	4,354	Lancashire	110, Cannon-st.‡
Do do B	16 20	16	50 0	10/- Sept. 92	50 0 0	12,230	Lancashire	110, Cannon-st.‡
Penrikyber Ord. ...	5 5½ xd	5	10 0	10 p c Mar. 94	10 0 0	15,000	Glamorgansh.	Penrikyber, Glamsh.
Do 5 to 7½ p.c.P	7¾ 8 xd	7¾	10 0	5 p c Mar 94	10 0 0	20,000	Glamorgansh.	Penrikyber, Glamsh.
Rhymney Iron	1⅛ 1¾	1⅛	5 0	3s July, 94	5 0 0	131,410	South Wales	26, Martin's-lane, EC
Do New... ..	¾ 1	¾	5 0	2/1 1-5 July 94	4 5 0	68,590	South Wales	26, Martin's lane, EC
Do 5% Mort D	92 95	92	100 0	5 p c July 94	100 0 0	£175,120	South Wales	26, Martin's-lane, EC
Rich. Evans & Co. A	6¼ 6¾	6¼	10 0	5s Mar. 94	10 0 0	43,502	Lancs.	Haydock, Lancs.
Do do B.	3¼ 3¾	3¼	10 0	2½ p c Mar. 94	5 0 0	15,979	Cheshr & Wales	Haydock, Lancs.
Rosewell Gas Coal	5	5	10 0	...	10 0 0	800	Fifeshire	21, S. Andw-sq., Edin
Do do	8	8	10 0	...	9 0 0	1,700	Fifeshire	21, S. Andw sq., Edin
Salt Union	4⅛ 5	4⅛	10 0	6/- Feb. 94	10 0 0	200,000		Salters Hall Ct., EC
Do 7 p c Pref.	10⅛ 11	10⅛	10 0	7/- Feb. 94	10 0 0	100,000		Salters Hall Ct., EC
Do 4½ D Sk Red	110 112	110	Stk.	4½ p c June 94	100 0 0	£1,000000		Salters Hall Ct., EC
Sandwell Park	18¾ 19	18⅛	10 0	5 p.c. Aug. 94	10 0 0	15,625	Staffordshire	West Bromwich
Sheepbridge ......A	19¼ 19¾	18¾	25 0	12/6 Sept. 94	25 0 0	19,933	Chesterfield	Chesterfield.
Do ....B	7¼ 7¾	7¼	10 0	5s Sept 94	10 0 0	4,970	Chesterfield	Chesterfield.
Do 5% Min...C	26⅛ 27	26⅛	25 0	12/6 July 94	25 0 0	4,491	Chesterfield	Chesterfield.
Shelton 1st 5% Deb.	85 90	85	100 0	5 p c July 94	100 0 0	£91 800	Staffordshire	122, Cannon-st., EC
Shotts Iron	20	20	Stk.	...	100 0 0	£299,210	Scotland	130, George st., Edin
South Hetton Coal	130 135	129	Stk.	10 p c Aug. 94	100 0 0	£100,000	Durham	49, John st., Sundld.
S. Wales Colliery A	9⅝ 10	9⅝	17 0	4 p c Aug. 94	17 0 0	8,000	Monmouthsh.	4, Sun ct., Cornhill
Do 10% B	4 4¼	4	3 0	10 p c Aug. 94	3 0 0	8,000	Monmouthsh.	4, Sun ct., Cornhill
Do 10% New B	2 2⅛	2	3 0	...	1 10 0	5,624	Monmouthsh.	4, Sun ct., Cornhill
Staveley C. & I. A	81 82	80	100 0	£2 Sept. 94	60 0 0	6,000	Derbyshire	61, King Wm. st.‡
Do do B	12⅞ 13⅛	12⅞	100 0	6/8 Sept. 94	10 0 0	3,100	Derbyshire	61, King Wm. st.
Do do C	81¼ 82¼	81¼	60 0	£2 Sept. 94	60 0 0	6,000	Derbyshire	61, King Wm. st.
Do do D	13¾ 13⅞	13¾	10 0	6/8 Sept. 94	10 0 0	3,100	Derbyshire	61, King Wm. st.
Stewart & Clydesdale	8	8	10 0	2/6 Aug. 94	10 0 0	45,000		41, Oswald st., Glas.
Do 6 p c Om Prf	12¾	12¾	10 0	..	10 0 0	25,000		41, Oswald st., Glas.
Tredegar Iron ...A	5¾ 6	5¾	50 0	10/10 Aug. 92	36 0 0	20,000	Monmouthsh.	28, Queen st., E C
Do do B	8⅛ 9⅛	8⅛	25 0	7/6 Aug. 92	25 0 0	10,000	Monmouthsh.	28, Queen st., E C
United Alkali	4¼ 4¾	4¼	10 0	4/- March 94	10 0 0	289,343		Exchange bldgs, Lpl
Do 7 p c Cm Prf	10 10¼	10	10 0	7/- Aug. 94	10 0 0	282,524		Exchange bldgs, Lpl
Do 5 pc M D Red	109 111	107	Stk.	5 p c June 94	100 0 0	£2,500000		Exchange bldgs, Lpl
United Asbestos A	2 2⅛	2¼	5 0	2/6 Mar. 94	5 0 0	10,000		Billiter st., EC
Do Def. B	⅛ ⅜	⅛	5 0	...	5 0 0	10,000		Billiter st., EC
Vickers, Son & Co.	8⅛ 9	..	10 0	8/- Feb. 94	10 0 0	75,000		Sheffield
Do. 5 p c Pref.	104 107	8⅞	Stk.	5 p c Aug. 94	100 0 0	75,000		Sheffield
Wigan Coal & Iron	4⅛ 4⅝	4⅛	10 0	3/- Aug. 94	7 10 0	153,350	Lancashire	6, Strand, WC
Do do	7 7⅛	7	10 0	4/- Aug. 94	10 0 0	65,960	Lancashire	6, Strand, WC
Wilson & Clyde......	11⅜ 11⅝	11	3 0	7/6 Mar. 94	3 0 0	40,000	Hamilton	157, Vincent st., Glas
Do 7% 1st O. Pref.	14	14	10 0	7s Mar. 94	10 0 0	1,791	Hamilton	157, Vincent st., Glas
Do 7% 1st O. Pref.	8⅛	8⅛	10 0	3/6 Mar. 94	5 0 0	2,209	Hamilton	157, Vincent st., Glas
Do 7 p c 2nd O. Pref.	8⅛	8⅛	10 0	3/6 Mar. 94	5 0 0	1,000	Hamilton	157, Vincent st., Glas

REPORTS FROM THE MINES—(Continued.)

AMERICAN BELLE.—The following cable information has been received from the mine: National Belle mine, No. 4 level. The ore is continuous for a length of 18 feet solid. The ore still continues at forebreast. Samples have assayed as follows:—4 to 7 ounces of silver per ton, 1-20th to 1-10th ounce of gold per ton, 3 to 17 per cent. copper. Will continue driving. Later will crosscut to ascertain width of ore. Every indication of north orebody.—Silverton smelter. It is reported that the Silverton smelter is treating the ores successfully, but the ore bins at the smelter being full, shipments from the mine have had to be temporarily suspended. The smelting company is, however, considering the question of extending its plant, which would permit of larger shipments being made. The mine superintendent under date 28th August reports, viz.:—National Belle Mine, North tunnel, north orebody, stope. Length of stope 19 feet, width 12 feet, height over back of level 50 feet During the fortnight we have been extracting ore from the ends and side of the stope. Value of ore: copper, 10 per cent.; silver 10 ounces per ton; gold, 6 ounces per ton. No. 2 level, north ore body, stope. Height of stope over back of level, 115 feet; present average length, 26 feet; width, 30 feet. Value: copper ore 12 to 15 per cent.; silver, 7 to 12 ounces per ton; gold 6-100 ounce per ton. During the fortnight 16 square sets of timbers have been put in the stope. This point is again in good working order for the extraction of ore. The stope has also improved in the value and character of its ore.—South ore body. Stope. Length of stope, 25 feet, width 15 feet. height over back of level 36 feet. There is no change to report in occurrence or character of ore. Value from 12 to 23 ounces silver per ton; copper 10 to 14 per cent.; gold 6 ozs. per ton. No. 3 level, south west cross-drift, raise. Height of raise over back of level, 37 feet; distance driven north west from top of raise, 8 feet; total distance driven from west end of raise, 12 feet. We expect in a few days to communicate this point with the winze sunk from the south west drift at No. 2 level.—North ore body, stope. Height raised, 6 feet; total height of raise over back of level, 28 feet; length, 10 feet; width, 6 feet. The copper ore occurs in bunches, also throughout a mass of iron pyrites. Value of ore from 6 to 9 ounces silver per ton; gold, 5-100 ounce per ton; copper, 5 to 10 per cent. The raise continues to improve in appearance. I hope within the next 10 or 12 feet of raising this place will have improved sufficiently to enable us to open out for stoping from the ends and sides of the raise.—No. 4 level, No. 3 west cross prospect drift. Distance driven, 20 feet; total distance driven 105 feet. Ore full width of drift—actual width not yet determined. In drifting during the last 8 feet the ore has been very solid and compact, it possesses the characteristics of the main orebody. We shall continue drifting some distance farther before opening out from the sides of drift to determine the full width of ore met with. Character of iron, iron pyrites, with grey copper and enargite (enargate copper ore is composed of copper, with considerable percentages of arsenic and sulphur) scattered through the mass of iron pyrites, also bunches of enargate. Value, copper, 5 to 13 per cent.; silver, 5 to 8 ounces per ton; gold, 4 to 6 ounces per ton.

ALMADA AND TIRITO.—Report for month ending August 25: Dios Padre. The lode in the 350 being poor, and seeing that this part of the mine can be proved by continuing the 250 north, the former has been temporarily suspended. The 250 feet level driving north has been extended 17·4 feet by four men. The lode has been without ore for some time, is smaller, and has not such a promising appearance. In view of the enormous amount of deads in the old San Jose shaft at the 250 driving south we have suspended removal of the debris and resumed driving. The lode is large, and yields small quantities of green ore—18·9 feet were driven by four men.—Stoping: The stopes back of the tunnel at Tirito are yielding paying quantities of good grade ore, assaying from 70 to 175 ounces silver per ton. Two stopes below the 12 fathom level at No. 2 winze, as also the stope back of the 24 level north, Balvanera shaft, are yielding fairly well.

ALAMILLOS.—Mine report dated September 12: The 85 fathom level driving west of Taylor's engine shaft is opening up good stoping ground; valued at 1 ton per fathom. In the 160 west of the same shaft the lode is wide and open, and contains stones of lead. The lode in the 100 west of Judd's engine shaft is small but compact, and produces good stones of ore, valued at ½ ton per fathom. In the 100 east the lode is small and poor. Miguel's winze sinking below the 20 fathom level worth 1 ton per fathom; this will soon reach the 40 fathom level. Carillo's winze sinking below the 140; the lode produces stones of lead.

BAYLEY'S REWARD.—Mr. E. J. Dunn (late Government Geologist of the Cape Colony, &c.) has made the following addendum dated July 19, to his report on the property: From the reports received from Mr. Gordon Lyon, director at the mine and from Mr. W. H. Matthews, manager since my visit, it appears that the quartz so far treated from the dumps has yielded excellent returns. Mr. Lyon writing on June 2, says:—"After running a week on stone entirely from the dump (Begelhole's) for 5½ ounces, and allowing for the rich stone added to the other crushings, we find the dump stone has been so far well over the 5 ounces, so I do not think we can get a better idea of the main body of stone than this." The importance of these results of battery crushings will be realised by reference to the remarks in my report above. Also, since my visit, rich stone has been struck, as reported by the manager, both in Everard's and Cockshott shafts, and coarse gold weighing up to 15 ounce pieces, was found in the former. These discoveries add greatly to the value of the property, and the further extension of prospecting at these sites should result in the opening up of bodies of profitable stone. The remarks in his report to which Mr. Dunn refers are as follows:—With respect to the stone, both in the reserves and in the dumps, in which rich shoots do not occur, I am unable to speak, and I consider it a most important work to have the value of the general run of stone away from such shoots, and taken from the several workings and dumps determined. Should they yield at the rate of 2 ounces per ton on an average, the future of the mine is assured.

EAGLEHAWK CONSOLIDATED.—Extract from the *Bendigo Advertiser*, August 13. The Eaglehawk Consolidated (English Company) have let a contract for driving at 26s. per foot, and expect to come upon the reef within 150 feet. With the short distance already driven they have come across a nice greasy looking wall, with the face dipping west and a good sized leader dipping east. They were delayed 24 hours through an accident to the pumping rods.

CHIAPAS.—Mine report for fortnight ending August 15:—Providencia Aver, Driven 13 feet, total 97 feet 6 inches, Assays for whole breadth 2 dwts. gold, 1 ounce 14 dwts. silver, 1·4 per cent. copper, and 2 dwts. gold, 2 ounces 4 dwts. silver, 1·53 per cent. copper. Small streak of ore looking strong and persistent, and of good quality.—Santa Fe winze cross cut north-west. Driven 10 feet, total 23 feet 6 inches. No change.—Sylva cross cut. The last three days drowned out through want of rainfall, no power to run both pumps in the mine.—Taylor cross cut north-east No. 1. Driven 9 feet, total 86 feet 6 inches. In the same ground, continues to show colours in pans.—Providencia No. 2 hill drift. Advanced 28 feet, total 50 feet. No change expected yet. — Old Providencia. Extracted 298 tons. Assays 17 dwts. gold, 11 ounces 5 dwts. silver, 6·03 per cent. copper, and 1 ounce 2 dwts. 12 grains gold, 12 ounces 12 dwts. silver, 6·45 per cent. copper, continues to look very well.—Santa Fe Stopes. (Santa Fe Stope and Taylor north-west branch). Extracted 343 tons, assays 6 dwts. gold, 5 ounces 16 dwts. silver, 3·44 per cent. copper, and 10 dwts. gold, 6 ounces 4 dwts. silver, and 3·36 per cent. copper.—Old Stope. 15 dwts. 12 grains gold, 7 ounces 12 dwts. 12 grains silver, 4·22 per cent. copper, and 10 dwts. gold, 5 ounces 16 dwts. silver, 3·93 per cent. copper, from newer stope.—Taylor No. 3 stope extracted 179 tons, assays 4 dwts. gold, 4 ounces 7 dwts. silver, 1·40 per cent. copper and 7 dwts. gold, 6 ounces 13 dwts. silver, 3·71 per cent. copper, holed through in bottom of stope into Taylor Tunnel west.—Providencia Aver extracted 34 tons from old pile of good ore. —Santa Fe Hill extracted 139 tons bunchy, but yielding very fine high class ore, assays 2 ounces 16 dwts. gold, 13 ounces 2 dwts. silver, 5.03 per cent. copper, and 2 ounces 15 dwts. 12 grains gold, 13 ounces 18 dwts. 12 grains silver, 8·75 per cent. copper. Putting in open cut to prospect Jardin.

FRONTINO AND BOLIVIA.—Mr. Eustice's report on the mines, La Salada, July 24: Silencio. You will notice from the mine agent's report that the sinking this month has fallen back very considerably. The Pocuné watercourse has, in the past month, been very troublesome and costly, but the new work on it is nearly finished, and when it is completed there will be no difficulty in keeping going all our machinery. The drivages in the levels at the bottom of the mine have been carried on fairly. In the south ends the mineral has been rich, but as nothing has been done much beyond level drivages, it is rather unfair to give an opinion. The work on the cross cut east, from No. 5 level north, has been communicated with the No. 4 level north. This level south is improving. In the No. 4 south the rock has been poor, but the lode is large, and we have been enabled to extract a large quantity of mineral from it in the stopes. The ends have been poor. The stoping ground above these points has been a little better throughout the month. A crosscut has been started from the No. 4 level north with the object of cutting the Nemeneme lode at this level. Further particulars of this work will be given in my half-yearly report.—La Salada. The sinking of the main shaft has been kept on fairly well. For the same reasons as those complained of under heading Silencio, you will notice that the pumping machinery has not been at work regularly throughout the month, but there have only been slight breakdowns. The ore from the Manto has improved, and as there is now water for both mills in La Salada and in San Joaquin, I hope to do much better next month than this.—Cordoba. Beyond the change of ground which occurs so frequently in this mine, nothing of importance is to be reported. The No. 8 cross cut has been driven 20 feet in the month. The ground worked has kept the mills in Cordoba and La Humedad going, except a part of the beginning of the month. What is needed is to push on the No. 8 level as fast as possible.—Marmajon and Marmajito. Very little unusual has occurred in any of these places in my general report for the six months, I will right you more fully on these sections. La Salada, August 7: Electric light plant. The installation of this is finished, but there has been some difficulty in the connections. However, we hope to set this right in a day or two and get to work. —Silencio. The sinking of the main shaft has this month been set on contract, and, so far, is progressing more rapidly than previously. In the No. 6 level north the lode has fallen off in value, and the ground has somewhat changed. In this level south, the end still continues in rich ore as before. The No. 5 level north was driven a few feet after holing with the No. 3 winze below the No. 4 level north, in the hope of catching the lode, but it has remained so horizontal in its inclination that we have been obliged to return and commence driving from the bottom of the winze. The winze is also being sunk to prove the inclination further. The cross cut west from No. 4 level north is being driven in order to open up the Bolivia lode. When started, it yielded a small quantity of gold bearing mineral, but it has now become unproductive. All other points remain unchanged. —La Salada. The sinking of the shaft goes on about the same as usual. The No. 6 end driving south is without change; the lode is 5 feet wide and poor. The level west from the No. 6 south on flat lode continues to produce pockets of pyrites, but these are somewhat poor. A new crosscut is put south to cut into the flat lode. A small branch has been met with, but the main lode has not yet been cut. The surface work is being pushed forward as well as circumstances have permitted, —Cordoba. Good progress is being made in the No. 8 crosscut, and water is issuing very freely from the end of the level. The No. 7 level south is much the same as last reported, the lode is about 9 inches wide of good mineral. The stopes throughout the mine are producing fairly. New quarters are being built for the miners close to the mouth of the No. 8 crosscut. This is to accommodate the workmen, as our old houses are too far distant from the place.—Tigrito. The levels driving east and west in the No. 6 crosscut are without change. The lode still remains poor, but the mineral is the same. The winze being sunk in the bottom of the No. 5 remains about the same.—Marmajon. The level west in the deep level cross cut is the same as when last reported.—Marmajito. The No. 2 cross cut has been resumed. The level west on the lode is about the same. A rise has been started in the back of this level to explore this branch and to ventilate the cross cut and workings. The cleaning of the No. 1 level has been delayed owing to the bad state of the timbers. This may be attributed to the old works, as usually occurs here in all these mines.

LINARES.—Mine report dated September 12:— Pozo Ancho Mine. In the 200 fathom level driving west of Peill's engine shaft, the lode is small and the granite hard for driving through. The lode in the 155 west of the same shaft is compact and regular and of a promising appearance, valued at 1 ton per fathom. The 178 west of Warne's cross cut continues unproductive. Good progress is being made in the sinking of No. 276 winze, below the 178 fathom level. —Los Quinientos Mine, Taylor's engine shaft. In the 185 east the lode is very open and yields stones of ore occasionally. The lode in the 165 east has fallen off a little in value during the past fortnight, now worth 1 ton per fathom. In the 150 east the lode does not contain ore enough to value. The lode in the 130 is small and unproductive. Luis winze sinking below the 130 fathom level in this lode is disordered by the slide. Barranco's winze below the 165 fathom level, the lode is hard for sinking through.

LIONSDALE.—The following is an extract from a letter from the manager of the company, dated Lionsdale. 27th August.—Work: The adit level has advanced 9 feet since I last wrote, and is now 66 feet beyond air shaft. We are keeping the hanging wall of the lode on the left of the drive, and at the point where we are the portion of the reef we have is squeezed by the casing coming in with the other portion of the reef coming from the right. In a few days I hope to have the whole reef in sight. The ground is much firmer, and we can now place our timbers 4 to 5 feet apart instead of 18 inches as formerly. Samples taken from the reef during the past week show better results than I had ever had before, two of them giving fully an ounce to the ton.

NEW QUEEN.—The following fortnightly report has been received from the mine dated Charters Towers:—No. 4 south level. Stoping has been carried on over this level. The ground continues hard; the reef is irregular and patchy, varying from 3 to 9 inches thick with blank portions. No. 5 south level has been extended a further distance of 10 feet, making the total distance 325 feet from underlie shaft. This level is now up to the boundary, and owing to the way in which it has been bearing east, there is very little ground to be stoped between Nos. 5 and 4 levels. The reef in the end of the level at about 8 feet from the boundary is pinched, and no stone remains in the end now. No. 5 level north has been extended a further distance of 10 feet, making a total distance of 239 feet from the underlie shaft. The thin vein of quartz mentioned in my last report continues, but so far has not improved in size. No. 6 level south has been extended a further distance of 12 feet, making it 33 feet, from underlie shaft. The formation here is very small, only a thin vein between the walls. The ground is very hard, making progress slow.—No. 4 formation. The underlie shaft has been commenced, and sunk a distance of 14 feet, with about 1 foot of stone in the face.—No. 1 north level. Stoping has been carried on over this level. The formation still continues large. The reef is somewhat irregular, varying from 8 inches to 1 foot.—No. 1 south level has been extended a further distance of 14 feet, making it 133 feet from end of crosscut. The reef in the end of level averages about 8 inches. Quantity of stone raised during the fortnight: No. 1 A level, 31 trucks; No. 4 south level, 184 trucks; No. 5 south level, 172 trucks; No. 4 formation, 167 trucks; total, 554 trucks.

NEW CROESUS.—General manager reports under date August 25 that the fourth level from vertical shaft has been started, and that the third level throughout is almost entirely opened up, which will furnish about 90,000 tons, or 12 months milling with 60 stamps.

PESTARENA.—September 15:—Ends. 46 east on No. 1 lode, the branch is 10 centimetres wide and good stones of ore have been met with. The branch in the 55 east on No. 1, and the A and B lodes in the 70 east, are much disturbed for the present. The 70 east looks fairly promising, the branch on hanging wall being 15 centimetres wide, yielding pyrites, The 90 west yields 4 tons per fathom at 2 ounces. The 140 west on No. 5 lode carries 10 centimetres of pyrites yielding 1 ton per fathom at 5 ounces. The 90 crosscut south from No. 5 has intersected a lode 50 centimetres wide, with a branch on each side containing pyrites. The stopes continue their usual yield. Work is being pushed forward in the Stabioli and Kint Mines and fair progress made. The machinery is working well, and the Pozzone Mine is forked to a depth of 27·80 metres.

TOLIMA.—The directors have received advices by the mail of September 19 from their mines, of which the following is an abstract: Frias July returns (152 tons) silver valued at 29d. per ounce, £6521 10s. 1d.; cost, £3991 2s. 7d.; profit, £2530 7s. 6d. The underground agent reports 115 fathoms 1 foot of ground expended, of which 85 fathoms 3 feet 4 inches were productive, leaving of unproductive ground 29 fathoms 3 feet 8 inches. The superintendent, writing under date of August 15, reports a great improvement in the 140 fathom east end, which was yielding 15 cwts. per fathom of mineral, assaying 490 ounces to the ton, whilst the appearance of the lode bids fair for further improvement. The 120 fathom east end at the same date had become productive, giving an estimated yield of 15 cwts. to the fathom of mineral, assaying 326 ounces to the ton. But a still more important improvement is reported in the 100 fathom west sink north branch, which has gone down 16 feet in rich mineral, and yielded an average for the month of 2 tons per fathom, and assayed at the date given above 1071 ounces per ton. The superintendent further reports that the 90 fathom sink and the 110 fathom rise had been communicated, and adds:—We have commenced to rise on the body of mineral cut in the 90 fathom east. This will be a most interesting prospect, as we have at this point 60 fathoms of unexplored ground above us, from the 90 to the 30 fathom levels.—Underground report: Engine shaft. This was sunk 14 feet by 10 men on company account, thus making 29 feet as total depth below the sole of the 130 fathom level. We also laid on new main rods from the 100 to the 110 fathom level, with pulleys and bearers to support same. 140 fathom west end was driven 13 feet by two men at $65 per fathom, thus making 80·7 feet as the total west of the winze. The lode yet remains poor and broken, and for current month this is suspended, and the men put to drive a crosscut just west of the winze, with the object of cutting the north part of the main lode. 140 fathom east end was driven 18·5 feet by four men, at $80 per fathom, thus making 139 feet as total east of the winze. The lode has yielded 15 cwts. of mineral per fathom, and although the forebreast is now rather poor, yet the prospects holds good and encouraging. 130 fathom west end was driven 17 feet by three men and a boring machine, at $80 per fathom, thus making 3222·2 feet as total west of the winze. The lode has yielded some good bits of mineral, but not in quantities to value. 130 fathom west back stope No. 1 was stoped 64 feet by eight men at $40 per fathom, and yielded 2 tons of mineral per fathom. 130 fathom west back stope No 2 was stoped 72 feet by six men at $30 per fathom, and yielded 1¼ tons of mineral per fathom. 130 fathom east end was driven 12·3 feet by two men at $75 per fathom, and remains unchanged. 130 fathom east back stope was stoped 44·4 feet by four men at $25 per fathom, and yielded 2 tons of mineral per fathom. It is situated from the west end of the 120 east winze No. 1. 120 fathom west back stope No. 1 was stoped 33 feet by four men at $30 per fathom, and yielded 2 tons of mineral per fathom. 120 fathom west back stope No. 2 was stoped 24 feet by two men at $22 per fathom, and yielded 10 cwts. of mineral per fathom. 120 fathom east end north branch was driven 12·5 feet by two men at $65 per fathom. The lode has improved, and is now yielding some good saving mineral. 120 fathom east back stope No. 1 was stoped 26 feet by four men at $40 per fathom, and yielded 15 cwts. of mineral per fathom. 120 fathom east back stope No. 1a was stoped 36 feet by four men at $26 per fathom, and yielded 2 tons of mineral per fathom. 110 fathom east end was driven 16·2 feet by four men at $65 per fathom, thus making 800·6 feet as total east of the engine shaft, and the lode remains unchanged. 110 fathom east rise was risen 13 feet by four men at $70 per fathom, and to date of writing it has holed to the 90 fathom east winze. 110 fathom east back stope No. 1 was stoped 45·9 feet by four men at $25 per fathom, and yielded 3 tons of mineral per fathom. 110 fathom east back stope No. 3 was stoped 42·5 feet by two men at $25 per fathom, and yielded 5 tons of mineral per fathom. 110 fathom east bottom stope was stoped 36 feet by two men at $20 per fathom, and yielded 2 tons of mineral per fathom. 100 fathom east bottom stope was stoped 30 feet by four men at $30 per fathom, and yielded 10 cwts. of mineral per fathom. It is situated from the east end of 100 east winze. 100 fathom west sink N.B. was sunk 16 feet by four men at $80 per fathom, and yielded 2 tons of mineral per fathom. 90 fathom east end was driven 13·4 feet by two men at $65 per fathom, thus making 912·3 feet as total east of the engine shaft, and the lode remains unchanged. 90 fathom east end Welton's lode was driven 13 feet by two men at $60 per fathom, and the lode remains poor. 80 fathom east stope was stoped 25 feet by two men at $30 per fathom, and yielded 15 cwts. of mineral per fathom. Shallow adit was driven 30·4 feet by four men at $45 per fathom, thus being 117·9 feet as total west of the crosscut, and the lode is without change to note. West end from new crosscut was driven 12·9 feet by two men at $80 per fathom. The lode, although it is narrow, yet it has been giving some stones of mineralised stuff, and the prospect, on the whole, seems encouraging for further extension.—Real de Frias. West shaft was sunk 20 feet by eight men on company account, thus making 133·5 feet as total depth below the sole of the deep adit. The lode remains without change to note. Deep adit west was driven 18·66 feet by two men at $40 per fathom, thus making 553·01 feet as total west of the shaft, and the lode remains poor.

UNITED GOLD FIELDS OF MANICA.—Return of mining work done during the two weeks ending July 28: Adit No. 1. Distance driven 2½ feet, total distance 565½ feet. Rock exceedingly hard. Day shift only, short of fuse for two days, and several boys sick and absent.—Adit No. 3 winze. Sunk 6¾ feet, total depth 11½ feet. Vein of quartz entire width of winze, and extends to north. It is separated in middle by a horse of talc clay about 1 foot wide. Vein pans well, and shows visible gold freely.

VICTORIA AND ALTAMIRA.—Venezula, August: Since my arrival here in the early part of this month I have been making a thorough survey of this large and important concession so as to give you my opinion at the earliest possible date, which I now beg to do as follows:—After inspecting the battery, saw-mill, tramway, and the different positions of the workings at the La Cruz, which I find to be situated 1170 feet higher than Port St. Felix and 350 than Callao, I found that during the short time the workings at La Cruz had been suspended, considerable growth of underwood had taken place. I cut a way through the bush to the Prospect shaft, No. 6 on plan, and on going down the shaft I found a lode of quartz well defined some 3 feet thick, 60° west of north, with a dip 55° south-west. The quartz is split with veins of ferruginous oxide and very splinty, containing gold in fine state. This would assert a steady percentage as the lode goes deeper. I shall carefully examine this lode and make assays of the quartz. On the left of the Quebrada and to the north of Nicholl's shaft the outcrop of a well-defined lode can be seen. A drive has been opened upon it called Edward's drive, No. 4 on the plan. The drive is 68 feet in, on the wall of the lode; on crosscutting the lode is 1 foot wide, and widening as it dips. The angle is 45° to the south, the run east 10° north. The quartz is glassy, of a dull white; very splinty, coloured by ferruginous oxide, probably peroxide of manganese, very heavy, and with wet assay gives fine gold. I have sent you some sketches which will give you an idea of these workings. On the left of the Quebrada is a drive called the west tunnel, No. 3 on plan, 156 feet long running east 25° north. This was started to cut the main Victoria lode, which runs right across the concession. It is blocked up with falling rock, but can be cleared at little expense. Above and below this drive many huge blocks of quartz of white and blue can be seen. They are splendid, and surely come from outcrops of immense lodes. The blue quartz appears very rich in gold, full of veins, and coloured by pyrites of chalko-pyrite with red hydrated oxide of iron.

AFRICAN CONSOLIDATED.—The following report has been received from the manager:—Obtaining Kaffir labour in the winter time is difficult, but I hope to have some experienced boys working shortly. I am sorry to report delay in mining, but no stone shall be left unturned to prosecute the works as speedily as possible. The contractors will give me 14 days longer to tender for the supply of coal.—Railway. I have had an interview with the chief superintendent, and he informs me that that portion of the line to within 40 miles was handed over from the contractors, but there will be a week or two delay in opening up this section for traffic, notwithstanding it being advertised to be opened earlier, that they are pushing on to the next station, and that shortly the engine will be running through your property. Tree planting has been extensively carried out, and a splendid variety of two and three year plants are growing. I impress upon you the desirability of prosecuting this enterprise, not only as a supply of timber for your mine, but as a future supply for coal mines, which must of necessity spring into work in the course of time. I may add the land could not be better adapted for the purpose, and I feel sure that eventually the venture will prove to be a source of a large revenue. The gum tree is so rapid in growth that in four or five years it makes capital pit props; 500 of these young trees have been planted, and are looking healthy, and provision will be made for planting each year, so as to keep up the supply and improve the estate. Upon the above the directors remark in their circular that "the board is exceedingly satisfied with the energetic manner in which the company's business is being carried out in South Africa, and that the prospects are now all that can be desired." The board hopes, in view of the fast approaching completion of the railway, that "an extensive coal business will be commenced at an early date."

BAND OF HOPE.—The manager reports under date July 27: During the past fortnight the work done on the upper reef has been confined to stoping from the back of the south-east level on a reef from 10 to 12 inches wide, of good quality. The underhand stopes have been carried on with one shift on a reef from 6 to 8 inches wide, of good quality. At the commencement of the past fortnight two men started on the bottom reef to drive a leading stope at the back of the No. 3 south level, on a reef from 12 to 15 inches wide, of good quality. Hauled 33 tons for the fortnight; total in paddock, 58 tons. The contractors have sunk your vertical shaft an additional 9 feet 6 inches, making it 103 feet 6 inches below No. 2 plat, and 833 feet 6 inches below the surface. Everything about the mine is in good working order.

BRITISH SOUTH AFRICA.—The company's officials at Salisbury report favourably upon the development which has taken place in the Hartley Hill, Umfuli, and Concession Hill districts. They also report that increased interest is being taken in the Lomogundi district. Mr. Hammond, the mining engineer, who is making a tour of the country to report upon the gold properties, was expected at Salisbury on September 5. Excellent reports have also been forwarded from Victoria as to the work and development on the reefs in that neighbourhood. A new reef has been discovered to the west of Victoria, and traced for nearly three miles, wonderful specimens being brought in by prospectors. Reports from Umtali are likewise very good and the development work on the various properties is proceeding rapidly. Transport riders, travellers, and merchants in general speak very highly of Mr. Lawley's management of the traffic on the Beira Railway. The line is working very well, and it is hoped that the extension to Chimoio will be completed by October 31 next.

CAPE COPPER.—Captain Henwood, July 31: Ookiep. The rock in the 130 fathom crosscut north of east level is still yielding stones of copper ore, but not to value. The ground in the 130 fathom level west of north crosscut having become unfavourable for copper it has been suspended. The 117 fathom level north of main east level is suspended to enable us to prove the spotted ground recently passed through at this point by sinking a winze. The men are put to cut out each side of the level so as to start it in the most promising part. The 92 fathom crosscut (No. 19) south of main level east has also been temporarily suspended to prove the spotted ground recently passed through. The men are put to cut out each side of the driving with the object of sinking a winze in the most promising part. The rock in the 92 fathom level east of south crosscut south-east of 42 winze, is presenting a few spots of copper ore. The stope in bottom of drive in back of 92 fathom level south-east of 42 winze at the present time is yielding 12 tons rich copper ore per fathom. The intermediate level between the 80 and 68 fathom levels south-east of the new shaft is still yielding occasional stones of copper ore. The rock in the 48 fathom crosscut south of main east level is spotted with copper ore, but not sufficient to value. The stopes throughout the mine continue to yield well.—Trial mines, Nababeep south. I am pleased to state that we have commenced to fix skip road, pumps, &c., in the shaft at this station. This work will be pushed on with the utmost speed.—Spectakel. The winze sinking below the 36 fathom level north-west of new shaft has been communicated with the stope in bottom of 36 fathom level north-west of No. 4 winze, thus giving good ventilation and laying open the ground conveniently for stoping.—Copperberg. The stopes in the adit level east of No. 1 south crosscut and east of whim shaft maintain their yield of 2 tons of copper ore per fathom each.—Returns for July. Ookiep, 2375 tons of 20 per cent.; Spectakel, 130 tons of 25 per cent. —Arrival at Swansea. The *Metapedia* with 1960 tons of ore, and 650 tons of regulus.—Arrival at Port Nolloth. The *Magwen*.—Tilt Cove, East mine: Captain W. R. Toms: Output for July 5120 tons of 4 per cent. wet assay.—Arrivals at Swansea. The *Vascongada* with 1110 tons of ore and 820 tons of regulus; the *Austerlitz* with 1870 tons of ore; and the *Duchess of Roxburgh* with 2300 tons of ore.

CUMBERLAND.—Mr. Gallagher reports as follows under date July 4: In my last report I mentioned the fact of our having struck the reef in the north end of No. 4 level by means of the tributors. The tribute has now terminated, and with a view to testing the value of the reef I raised 4 tons of ore to be treated at our mill as a trial crushing, with the following result, viz.: 4 tons crushed yielded 20 ounces 15 dwts. retorted gold; 4 tons crushed yielded 17 ounces 14 dwts. smelted gold. The value of the gold is £2 17s. 4d.; the value of the silver, 6d.; total mint value is £2 17s. 10d. per ounce; deducting 2s. 10d. for bank and assay charges, leaves £2 15s. per ounce. The yield of smelted gold was at the rate of 4 ounces 8½ dwts. to the ton, so that the net value per ton of the ore in this reef is £12 3s. 4d. Even should the reef not widen out, but remain at its present value and size (6 inches) we can raise stone at a profit. Some deadwork, however, will be necessary before we can make a fair start on the reef. A considerable quantity of mullock, accumulated during the past five years, must be removed, and then drive a small level from the No. 2 winze about 20 feet below the old No. 4 level. This will be the most convenient and economical way to follow up the reef at present. Should the reef continue further north we can then sink a winze, and drive an intermediate level, stoping out the ground above and trucking our stone and mullock from the No. 5 level. I reckon that employing four men for a month, we should then be in a position to be driving on the reef. It is my opinion that this is a continuation of the pay shoot which was met with between Nos. 2 and 3 levels running into the No. 1 North Company's ground, and I think it would be advisable to follow it up thoroughly, considering the favourable prospects and the richness of the reef.

CHAMPION REEF.—Superintendent's report for the fortnight ending August 27:—Dalyell's shaft. New rise in back of 685 feet level south of shaft to communicate with winze sunk below 620 south has been put up 6 feet. No sample taken.—Garland's shaft. This has been sunk 8 feet, total depth 752 feet. Lode 4 feet wide, assaying 1 ounce 14 dwts. 3 grains of gold per ton. We have not done anything towards driving the 740 north and south of shaft since last report. We were obliged to suspend the driving of these ends for a time until we complete the cutting of top and bottom plat at the 740. The 630 feet level north of crosscut west of shaft driven 31 feet, total length 159 feet 3 inches. Lode 4 feet wide, assaying 2 ounces 1 dwt. 8 grains of gold per ton. No. 1 rise in back of level risen 20 feet 6 inches, total height 79 feet. Lode 1½ feet wide, assaying 1 ounce 11 dwts. 1 grain of gold per ton. No. 1 winze below 630 south of cross cut sunk 20 feet 3 inches, total depth 65 feet. The bottom of winze is now in the limb of the dyke met with in the shaft at the 740. The 630 feet level north of west cross cut driven 28 feet 3 inches, total length 637 feet 3 inches. Lode 2 feet wide, assaying 1 ounce 6 dwts. of gold per ton. The 440 feet level north of west cross cut driven 27 feet, total length 547 feet. Lode 4 feet wide, assaying 2 ounces of gold per ton. No. 3 rise in back of level risen 12 feet 6 inches, total height 52 feet 3 inches. Lode 4 feet wide, assaying 1 ounce 14 dwts. 19 grains of gold per ton. No. 4 rise in back of level risen 10 feet 6 inches, total height 26 feet. This is communicated with No. 2 or incline winze below 340 north, and opened up a large section of good stoping ground. The 340 feet level south of No. 2 west cross cut at 340 north has been driven 30 feet 3 inches, total length 161 feet. Lode 1 foot 3 inches wide, assaying 17 dwts. 15 grains of gold per ton. No. 4 new rise in back of level risen 11 feet, total height 11 feet. Lode 2½ feet wide, assaying 1 ounce 17 dwts. of gold per ton. No. 3 rise in back of 340 north of No. 1 west crosscut risen 12 feet, total height 133 feet. This is communicated with winze sunk below 240 north of west crosscut north of shaft. No. 3 new winze below level under the above rise has been sunk 4 feet. Lode 3½ feet wide, assaying 1 ounce 10 dwts. 9 grains. No. 2 or incline winze below 340 north sunk 6 feet 3 inches, total depth 130 feet 6 inches. This is communicated with 440 No. 4 north rise. Winze below 240 north of west crosscut north of shaft in breast of end sunk 9 feet 3 inches, total depth 91 feet. This is communicated with No. 3 rise in back of 340 north and opened up a large section of good stoping ground.—Ribbledale's shaft. We are at present engaged cutting cistern plat at the 540 feet level preparatory to our fixing a plunger lift at that level, consequently we have not been able to sink the shaft. The 540 feet level north of shaft has been driven 19 feet 9 inches, total length 108 feet 3 inches. Lode small, 9 inches wide, assaying 1 ounce 17 dwts. 5 grains of gold per ton. The crosscut east of 440 south of shaft has been driven 20 feet 6 inches, total length 28 feet 6 inches. We have not as yet met with anything of importance. New winze below 440 north of winze sunk below 340 north of shaft on south point of fold has been sunk 3 feet 9 inches. Lode 2 feet wide, assaying 1 ounce 18 dwts. of gold per ton. Crosscut east of 340 feet level south of shaft has been driven 1 foot 9 inches, total length 21 feet. Having passed through the lode it is suspended. The 340 feet level south of crosscut driven 17 feet 6 inches. Lode 2½ feet wide, assaying 1 ounce 11 dwts. 15 grains of gold per ton. 340 north of crosscut driven 15 feet. Lode 3½ feet wide, assaying 2 ounces 3 dwts. 13 grains of gold per ton. New rise in back of level risen 11 feet 9 inches. Lode 2 feet wide, assaying 1 ounce 11 dwts. 8 grains of gold per ton. No. 1 rise in back of 340 south of shaft risen 11 feet 9 inches, total height 122 feet 9 inches. This is communicated with 240 south of shaft. Rise in back of 240 south risen 12 feet 9 inches, total height 20 feet. Lode 1½ foot wide assaying 1 ounce 14 dwts. 2 grains of gold per ton.—Carmichael's shaft: We have completed the Underlie shaft to the 315 feet level, and are now engaged enlarging the shaft below this level. The 315 crosscut west of shaft has been driven 24 feet 6 inches, total length 463 feet.—Rowe's Shaft. This has been sunk 11 feet 6 inches, total depth below the 315 feet level 83 feet 6 inches. Lode 1 foot 9 inches wide, assaying 3 ounces 16 dwts. 12 grains of gold per ton. Winze below 315 north of shaft near the boundary sunk 17 feet, total depth 21 feet. Lode 2 feet wide assaying 1 ounce 9 dwts. 14 grains of gold per ton. Winze below 315 feet level south of shaft sunk 11 feet 3 inches, total depth 53 feet. Lode 3½ feet wide assaying 12 dwts. 9 grains of gold per ton. Rise in back of level risen 13 feet 6 inches, total height 107 feet 6 inches. Lode 4 feet wide assaying 2 ounces 10 dwts. of gold per ton.—Stopes. These throughout the mine are yielding their usual quantities of quartz. During the past few days we have had some very heavy rain which has completely filled the whole of our tanks. Our large reservoir holding 1,500,000 gallons of water is full to overflowing.

CRAVEN'S CALEDONIA.—The following fortnightly report has been received from the mine, dated Charters Towers, August 21: The winze from No. 9 level has been sunk an additional 11 feet, making a total depth of 153 feet from the level. The reef in the bottom of this winze is about 10 inches thick. In the underhand stope from No. 9 level the reef is about 10 inches thick. No. 9 level has been extended a further distance of 8 feet, making a total distance of 280 feet from the slide. The reef in this level is about 8 inches thick; in the first two stopes it is about 10 inches, and about 8 inches in the next three stopes. No. 6 level has been extended a further distance of 8 feet, making a total distance of 356 feet from the slide. There is about 6 inches of stone in the face at present—about 10 inches of reef in the first three stopes, about 8 inches in the next four. No 7 level has been extended a further distance of 7 feet, making a total of 427 feet from the slide; and the formation referred to in my last report widened out to about 3 feet, and is still intermixed with leaders. In the stopes over No. 6 level there are about 6 inches of stone. No. 4 level has been extended a further distance of 14 feet, making a total of 86 feet from the old level. The reef in this level and two stopes continue about the same. The haulage of stone for the fortnight is 148 tons, making a total of 308 tons in paddock. At the Victoria and Queen shaft the eastern level has been extended a further distance of 9 feet, making a total of 44 feet from the boundary peg. The reef in this level is about 5 inches thick. In the No. 1 stope, over the level, the reef is about 10 inches thick; No. 2 stope, 8 inches. In No. 3 stope the reef is pinched a little; No. 4 stope, 7 inches. The haulage of quartz from this shaft for the fortnight is 19 tons, making a total of 54 tons in the paddock.—(Signed) G. Cabassi.

DON PEDRO.—Maquine mine half monthly letter, August 15: Operations for the month have been carried on as follows: Sinking of the shaft, repairing same throughout driving west from the 50 crosscut, also rising from the 60 north towards the 50. The two last named have been carried on at intervals as force permitted.—Incline shaft. The sinking of this has been carried on as fast as force will allow. On the 13th we completed excavating for the set, and same was fixed at the date mentioned. We are now in full swing ahead for another set. The ground towards the back of shaft is fairly hard, but towards the bottom, or rather half way down, the forebreast is soft, with plenty of water, which is following down the sinking. Distance sunk under the 60 to date is 10 feet 6 inches.—Shaft repairs. The repairing of the most dilapidated places has been continued with all possible speed, and by the end of this month we shall be able to resume the hoisting with the two cars, when gold raising will be commenced as stated in my last letter. The drivage west from the 50 crosscut also the incline rise from the 60 north have been wrought on at intervals owing to the force not working regularly, therefore these places have been neglected, as the two most important places for the moment are the sinking and repairing of the shaft.—Ventilation. Making of the air pipes for this has been carried on as fast as possible.—New adit. Good progress has been made here although several changes have been met with in the strata, the men are advancing the drivage well.—Reduction Department: We are very busily engaged fixing and repairing this to commence the treatment of mineral. In the new dam, where we take the water for treatment of mineral, being under repairs, as the mason work failed, and in consequence a large quantity of water was making its escape, therefore to make this complete we are plastering it over with cement. The stamps also are under repairs, also the flumes which carry the mineral through to the washhouse have to be repaired, but although we have a great deal of work to accomplish both in the mine and out, we hope to be in full working order about the latter part of the month.—Running Work. As usual several repairs have been made, such as packing pulleys and other work in connection with the transmission power been kept in very satisfactory working order throughout.—Morrovista Anna. The drivage from Bawden's shoot has been continued on the course of the ore which has a very encouraging appearance and is of the same size as when last reported. Ground driven through to date being about 9 feet. The clearing of the deep adit has been kept on.

GRASKOP.—Extract from a letter from manager dated August 21: The mine will be ready to send down ore at any time the tramway is ready to take transport, and we are only awaiting the necessary points and crossings and brake gear for this. I am hoping every day to hear of their arrival as grass is getting good again for cattle. The lead we have been prospecting is still being followed; it is getting better in the show of gold, and also larger, being about 9 inches thick.

GOLD FIELDS OF MYSORE.—Mine report for fortnight ending August 27: Oriental lode, south shaft. The 470 feet level, north of shaft, has been extended 6 feet 1 inch, total length 117 feet 4 inches. Lode 1½ foot wide, carrying 1 foot of quartz, assaying 15 dwts. 18 grains of gold per ton. 470 south extended 6 feet 3 inches, total length 129 feet. Lode 3 feet wide, carrying 2½ feet of quartz, assaying 1 ounce 14 dwts. 19 grains of gold per ton. The 380 feet level north has been extended 3 feet 10 inches, total length 219 feet 2 inches. Lode 1½ foot wide, carrying 1 foot of quartz, assaying 12 dwts. 9 grains of gold per ton. 380 south extended 6 feet, total length 214 feet 9 inches. Lode 3 feet wide, carrying 2½ feet of quartz, assaying 18 dwts. of gold per ton. The 280 cross cut east of shaft has been extended 4 feet 6 inches, total length 261 feet 3 inches. The strata is a little easier, and of a more favourable character.—Prospecting work. We are hindered in this work a little by accumulation of water, owing to heavy rains. Captain Williams is sending a report on this work. New machinery sites have been selected for the new compressor and 20 head battery, and we hope to start taking out foundations in a day or two.

— Report on prospecting operations dated August 28: West Balaghat Block. No. 1 shaft. North drive at the bottom of this shaft, 117 feet from surface, has been driven 12 feet, total distance from shaft 81 feet 6 inches. Lode 1 foot wide, assaying 13 dwts. 18 grains of gold per ton. South drive has been driven 6 feet, total distance from shaft 84 feet 6 inches. Lode 2 feet 6 inches wide, assaying 7 dwts. of gold per ton.—No. 2 shaft. This has been sunk 5 feet, total depth from surface 149 feet. There is lode matter in the bottom of this shaft 3 feet 6 inches wide. The leader of quartz is 6 inches wide, assaying 8 dwts. 12 grains of gold per ton. Through the increase of water, owing to heavy rains, I am sorry to say we are obliged to suspend the sinking of this shaft. North drive, 100 feet from surface, has been driven 6 feet, total distance from shaft 79 feet 6 inches. Lode 2 feet 6 inches wide, assaying 1 ounce 5 dwts. 5 grains of gold per ton. South drive has been driven 5 feet 3 inches, total distance from shaft 93 feet 6 inches. Lode 9 inches wide, assaying 5 dwts. 12 grains of gold per ton.—No. 3 shaft. We hope the cutting down and timbering of this shaft will be completed in a week or 10 days, when we shall be able to resume the drivage of both drives.—No. 4 shaft. This has been sunk 7 feet 10 inches, total depth from surface 146 feet 3 inches. Lode 1 foot 6 inches wide, assaying 6 dwts. of gold per ton.—Road block. Shaft No. 3 north No. 2 eastern lode. North drive, 53 feet from surface, 20 feet north of the bottom of this shaft, we crosscutted west 7 feet, and met with a small stringer of quartz and have followed it 4 feet 9 inches north of crosscut. As yet it is of no value. South drive has been driven 18 feet 6 inches, total distance from shaft 59 feet 8 inches. Lode 2 feet wide, assaying 3 dwts. of gold per ton.—North shaft. 62 feet from surface we started to drive both north and south. North drive has been driven 9 feet, total distance 9 feet. Lode 1 foot 6 inches wide, assaying 10 dwts. 9 grains of gold per ton. South drive has been driven 12 feet 6 inches, total distance 12 feet 6 inches. Lode 1 foot 6 inches wide, assaying 3 dwts. 18 grains of gold per ton.—Ajjanalli block. About 2000 feet north of south boundary line and 300 feet west of the eastern boundary line we have made a trench 56 feet long, 6 feet deep, and 3 feet wide. Nothing met with in this. 500 feet west of the above a trench 23 feet long, 5 feet deep, and 3 feet wide; in this we met with a vein of quartz 1 foot 4 inches wide of no commercial value.

JAVALI.—The manager writes under date of July 18: Stope No. 1. During the month 134 tons of ore were brought to the mill. The lode here still varies low grade ore. We have again commenced operations in the end of Pims; the lode has greatly improved, though still hard for driving, it was advanced 6 varas.—Stope No. 2. From this stone 80 tons were broken. The lode continues the same throughout. The crosscut south was driven 5 varas. We are making slow progress owing to the tightness of the ground, but have now cut into the horse dividing the north and south lode.—San Pablo. 64 tons of ore were extracted. The lode is still very hard for sinking.—Mill reports. 10 stamps worked 22 days, crushing 360 tons of ore, which yielded 103 ounces of gold from the arrastras 24 ounces; total, 127 ounces of gold. The gold is valued at £254, the cost for the month being £212.

KEMPINKOTE.—Superintendent's report for the fortnight ending 27th August: Garland's shaft has been sunk 8 feet, making a total depth of 227 feet. A little quartz has been cut in the south east corner, but only shows a trace of gold. The ground is not so hard, but continues to be wet. 183 feet drive south has been advanced 24 feet, making a total length of 132 feet. The end carries the lode for its full width to the value of 14½ dwts. to the ton. The lode continues hard, and the back in places is slightly wet. 183 feet drive north has been advanced 9 feet 6 inches, making a total length of 25 feet 6 inches. The lode became very jointy and rusty, and slow progress was made on that account. The machine was stopped driving here on the 23rd. This drive is now being advanced by hand labour. The end still carries lode for its full width, and assays 12 dwts. of gold to the ton. Henty's shaft has been sunk 1 foot 6 inches, making a total depth of 209 feet 6 inches. Sinking was suspended from time to time, in order to carry out some necessary timbering in the shaft above and at the 173 feet level in safety. This has now been completed, and the sinking can be pushed ahead. The ground is extremely hard. 173 feet drive south has been advanced 12 feet, making a total length of 136 feet. The ground became more solid, and a machine has been now put to drive here from the 25th. The rock is chlorite schist, very similar to the country rock, but assayed 3 dwts. of gold to the ton. The back still continues wet.

LA PLATA.—Latest reports.—Mozambique. Mr. Niness, the agent of the Gold Fields Company writing from Nova Macequece, on August 4, states that the No. 1 drive on the Lion Mine is making satisfactory progress towards the north reef, total distance driven 93 feet. A site has been chosen for drive No. 2 to intersect another reef on the property. The new engineer of the Companhia de Mocambique has inspected and reported most favourably on the Lion and Tiger properties. In the drive on the course on the Bettencourt reef, Mr. Niness reports that the reef has varied very little in size, all pannings therefrom show gold. Mr. Niness adds, I am pleased to report they are making rapid progress in the construction of the Beira railway to Chemois. —Leadville. Mr. Philip Argall reports that he has a large amount of development work in hand, also that the advance in silver has a stimulating effect, and he expects now to be able to market some of the lower grade ores profitably.

LIONSDALE.—August 20: The manager writes: I wrote you fully on the 16th instant, and since then we have advanced about 6·7 feet in drive. The reef now fills the whole drive, and there is still a large body of quartz to our right. The character of the quartz is much more favourable than any we have yet passed through, being close grained, and showing visible gold at times. The quality is several dwts. better than when I last reported on it.

NAMAQUA.—Abstract of superintendent's report for July:—Tweefontein Mine, 125 fathom level north. Driving has been suspended for a time, pending the development of the No. 29 winze.—115 fathom level east. The lode at this point has fallen off in value, having become more heavily charged with iron. Worth 3 tons of ore per fathom.—115 fathom level east, No. 29 winze. This is being sunk a few fathoms behind the above driving. The lode on the top was worth about 4 tons of ore per fathom, but is falling off in value as the depth increases.—115 fathom level west. At this point patches of mineralised ground of a very promising appearance have been met with during the month, but nothing of value.—105 fathom level east. There has been no change at this point. Worth 5 tons of ore per fathom.—105 fathom level west. This driving is also without change.—105 fathom level west, No. 27 winze. The lode at this point still yields very rich quality ore, and is worth 5 tons of ore per fathom.—95 fathom level west. The lode has improved here and preparations are being made to increase the size of the driving to 9 feet high by 9 feet wide. Worth 6 tons of ore per fathom.—95 fathom level west, No. 28 winze. This winze is being sunk at a few fathoms

behind the above driving, and is opening up stoping ground of fairly good value. Worth 5 tons of ore per fathom.—85 fathom level west. The lode at this point is practically without change. Worth 3 tons of ore per fathom.—Stopes, 105 fathom level west (back of) and 95 fathom level west (bottom of). These stopes are still yielding well, being worth in each case 10 tons of ore per fathom.—New shaft, 25 fathom level west. This level is now being driven 12 feet high by 12 feet wide, and continues to yield well. Worth 10 tons of ore per fathom.—25 fathom level east, No. 1 winze. This winze is opening up a valuable section of stoping ground. Worth 8 tons of ore per fathom.—Shipping. The *Golconda* arrived at Swansea from Port Nolloth on September 8 with about 690 tons of ore. The *Wanlock* arrived at Port Nolloth to load on September 5.—Output for August, 450 tons of ore of 28 per cent.

NEW CRŒSUS.—The general manager reports, under date August 25, that the fourth level from vertical shaft has been started, and that the third level throughout is almost entirely opened up, which will furnish about 90,000 tons, or twelve months' milling with 60 stamps.

NEW VIRGINIA TRANSVAAL.—Captain Hodge, the mine manager, reports under date, August 4: You will be glad to know we have effected the communication with the crosscut from Curtis's shaft after a hard task, partly owing to the hard bar we have had to drive and rise through, and also the ventilation which had been very bad for some time and caused progress to be much slower than it otherwise would have been; this is an important piece of work, and not only lays open a rich point to stope large quantities from, but also opens a way by which I am enabled to get the ore to the mill at a considerable reduction to that of hauling it to surface through Spicer's shaft. The stope south of Spicer's shaft is yielding ore of a splendid character being full of visible ore. Reef from 5 to 6 feet wide and pans well.

NO. 7 NORTH-EAST QUEEN.—The following fortnightly report has been received from the mine, dated Charters Towers, August 3: —During the fortnight Goninon and party have turned out a fair amount of crushing dirt from the stulls over No. 3 level. Cairns and party have also done fairly well. They are at present crushing. Perry and party under No. 3 level have from 9 to 15 inches of good mineral stone in the race. During the fortnight a block of ground between the Nos. 6 and 7 levels near the shaft was let to Pollard and Party. These men have about 9 tons broken, which will be crushed next week. The total amount of stone raised by the different parties is about 35 tons.—(Signed) H. Davis.

OOREGUM.—Mine report for fortnight ending August 27: Taylor's shaft sunk 10 feet 6 inches, depth below 560 feet level 50 feet. Lode 3 feet 6 inches wide, assay value 3 ounces 5 dwts. 8 grains. The 560 feet level south driven 19 feet 3 inches, total 89 feet 3 inches. Lode 1 foot 9 inches wide, assay value 2 ounces 3 dwts. 13 grains. The 460 feet level south driven 21 feet 6 inches, total 488 feet 9 inches. Lode 3 feet 6 inches, value 1 ounce 1 dwt. 19 grains. No. 1 winze, 460 feet level south, sunk 5 feet 9 inches, total 67 feet. Lode 6 inches wide, value 2 ounces 2 dwts. 11 grains. No. 2 winze, 460 feet level south, sunk 6 feet 6 inches, total 55 feet 6 inches. Lode 1 foot wide, value 1 ounce 2 dwts. 21 grains. No. 3 winze 460 feet level south sunk 6 feet 9 inches, total 23 feet. Lode 4 feet carried, value 12 dwts. No. 4 winze 360 feet level south sunk 3 feet, total 14 feet 3 inches. Lode 2 feet 6 inches, value 1 ounce 20 grains. Wallroth's shaft sunk 8 feet, total 888 feet 6 inches. Lode 1 foot wide, value 5 dwts. 10 grains. The 860 feet level south driven 19 feet, total 46 feet 6 inches. Lode 2 feet 6 inches wide, value 4 dwts. 8 grains. The 760 feet level south driven 12 feet 6 inches, total 238 feet. Lode 1 foot wide, value 6 dwts. 12 grains. No. 1 winze 760 feet level south sunk 4 feet 6 inches, total 37 feet 6 inches. Lode 2 feet wide, value 4 dwts. 8 grains. The 760 feet level north driven 4 feet 6 inches, total 116 feet 3 inches. Lode 2 feet wide, value 7 dwts. 15 grains. No. 1 winze 760 feet level north sunk 2 feet 3 inches, total 29 feet 3 inches. Lode very small, no sample. The 660 feet level south driven 24 feet, total 661 feet. Lode 3 feet wide, value 4 ounces 12 dwts. No. 2 winze 660 feet level south, sunk 3 feet, total 61 feet 9 inches. Lode 1 foot 6 inches, value 1 ounce 1 dwt. 19 grains. No. 3 winze 660 feet level south sunk 2 feet, total 49 feet 9 inches. Lode 1 foot, value 8 dwts. 17 grains. No. 4 winze 660 feet level south sunk 3 feet 6 inches, total 33 feet 3 inches. Lode 6 inches wide, value 15 dwts. 6 grains. No. 4 rise 660 feet level south risen 8 feet 6 inches, total 14 feet 6 inches. Lode 1 foot 4 inches wide, value 10 dwts. 20 grains; communicated with No. 4 winze from 560 feet level. No. 4 winze 560 feet level south sunk 2 feet 3 inches, total 77 feet. Lode 1 foot 6 inches wide, value 9 dwts. 19 grains; communicated with No. 4 rise from 660 feet level. No. 6 winze 560 feet level south sunk 5 feet 6 inches, total 94 feet. Lode 3 feet wide, value 2 ounces 5 dwts. 17 grains. The 560 feet level north driven 17 feet, total 249 feet 6 inches. Lode 6 inches wide, value 1 ounce 17 grains. No. 7 winze 460 feet level south sunk 3 feet 3 inches, total 102 feet. Lode 2 feet wide, value 18 dwts. 12 grains; communicated with 560 feet level. The 360 feet level north driven 1 foot 3 inches, total 265 feet 6 inches. Lode contracted, no sample. Incline winze on point of fold in bottom of 280 feet level north sunk 25 feet 6 inches, total 118 feet. Lode 4 inches wide, value 19 dwts. 15 grains. The 215 feet level north driven 11 feet 6 inches, total 501 feet 9 inches. Lode 10 inches wide, value 6 dwts. 12 grains. No. 4 winze 215 feet level north sunk 7 feet, total 15 feet 9 inches. Lode 1 foot, value 1 ounce 12 dwts. 16 grains. The 215 feet level south on fold driven 3 feet 9 inches, total 10 feet. Lode 1 foot 9 inches, value 2 ounces 4 dwts. 15 grains.—Low's shaft. The 610 feet level south driven 5 feet, total 15 feet 6 inches. At this point a crosscut west was commenced and has been driven 14 feet 6 inches, and will be continued until the lode is intersected with all possible despatch. The 510 feet level south, driven 14 feet, total 188 feet 3 inches. Lode 1 foot 2 inches wide, value 1 ounce 1 dwt. 19 grains. No. 1 rise 510 feet level south risen 7 feet 6 inches, total 14 feet. Lode 2 feet, value 2 ounces 1 dwt. 9 grains. No. 3 winze 430 feet level south, sunk 7 feet, total 30 feet 6 inches. Lode 1 foot wide, value 2 ounces 5 dwts. 17 grains. Probyn's shaft sunk 6 feet 6 inches, total 1020 feet 6 inches. The 950 feet level south driven 14 feet, total 196 feet. Lode 1 foot, value 13 dwts 2 grains. No. 1 winze 950 feet level north, sunk 4 feet 6 inches total 52 feet 6 inches. Lode 3 inches wide, value 17 dwts. 10 grains. The 850 feet level south driven 1 foot 6 inches, total 309 feet. Lode pinched. No. 1 winze, 850 feet level south, sunk 5 feet, total 79 feet. Lode 6 inches wide, value 10 dwts. 20 grains.—No. 2 Trial shaft. The 250 feet level south driven 9 feet 6 inches, total 55 feet. Lode 2 feet 6 inches wide, value 1 ounce 7 dwts. 5 grains. The 250 feet level north driven 7 feet 6 inches, total 56 feet 6 inches. Lode 3 feet wide, value 10 dwts. 20 grains.—Exploratory work. Wallroth's shaft. The cross cut west from 280 feet level south towards Munday's lode driven 13 feet 6 inches, total 486 feet. No perceptible change in the strata. Throughout the mine 53 stopes are being worked, which are producing quartz of fair average quality, all of which will be measured at the end of current month and reported on in the next report.

SPITZKOP FARM.—Manager's report for week ending August 18: 10 stamper mill worked 70 hours, crushed 100 tons of ore. Of this 45 tons were from the hydraulic, 55 tons from the creek. Interim clean up yielded 167 ounces of amalgam.—Reef Hill. Getting out ore from the creek.—Hydraulic. Getting out paving stones, and 500 feet of boxes have been repaired.—Prospecting. No. 1 drive on the reef has been extended 26 feet, making a total of 106 feet. The reef in the face is 18 inches thick. The pan prospects are good; a great deal better than last week. No. 2 drive on the reef has been extended 29 feet, making a total of 86 feet. The reef in the face is 15 inches thick, and shows good prospects in the pan, from 12 to 15 dwts. to the ton.—No. 3 drive. A cutting of 29 feet in length, and from 11 feet to 2 feet 6 inches deep. The reef in the face is 14 inches thick, and prospects about 10 dwts. to the ton. This is 150 yards south-east of No. 2 drive. The reef has also been found half way between No. 3 and No. 5 drives, thickness of reef about 12 inches, and shows fair prospects in the pan. A drive will also be commenced there next week. Other work in the form of sinking and trenching is in hand.

BAYLEY'S REWARD.—Mining report dated Coolgardie July 29: Sylvester shaft. During the week good progress has been made, having been sunk a further depth of 8 feet, total being 30 feet from chamber. Have just touched footwall of the lode, which proves it to be fully 6 feet thick, composed of a laminated stone, highly mineralised, and from time to time showing good gold. The walls are well defined, giving every appearance of the lode continuing down. South drive 220 has been driven 6 feet, full length 113 feet from shaft; lode very much smaller at present, but from indications expect it again opening out shortly to its usual size. West cross cut (Gorrie's) for the week has been extended 16 feet, total 135 feet from shaft; ground favourable for working, and hope still to make good progress.—160 feet level. Since last report have done no work beyond timbering and making shoot at the bottom of the winze or continuation of Gordon shaft, previous to opening out an intermediate drive south between the 100 feet and 160 feet levels for the purpose of opening up stopes. 100 feet stopes continue to yield stone of very high grade as usual.—Intermediate drive, Gordon shaft. An intermediate drive has been opened north from this shaft, about midway between the 50 feet and 100 feet levels, and has been driven 12 feet, showing some very good gold.—Everard shaft. Rise in south drive has been poled through to surface, also timbered and prepared for hauling stone through when necessary. North drive has been driven 10 feet, total 29 feet from shaft; still carrying portions of lode which contains fine gold, that we think will improve as we continue north underneath the large outcrop.—Cockshott shaft. During the week all work in the north drive has been suspended, and started a small drive south to ascertain if the lode breaks suddenly, or takes a bend towards Begelhole shaft. This has been driven 12 feet, the stone giving place to a sort of felspar formation, bending sharply to the west. We shall continue this for a few days longer, when driving the north drive will be resumed. Begelhole shaft has yielded some very good stone indeed, and continues to look well. Timber for battery is being prepared, and I hope to see some of the pile logs in position during the coming week. Stone crushed for the week has been 80 tons, 14 cwts. being from the strong-room. Yield for the week has resulted in the return of 700 ounces, showing that the ore dumps and stone raised still continue to yield well.—Gold dispatched. On the 27th we dispatched by escort 1406 ounces of bar gold, you being advised by wire on the same day.—(Signed) M. H. Matthews."

"July 30: Since writing the above report we are very pleased to say rich gold has been struck in the bottom of Sylvester Shaft or 250 feet level. The stone is by far the best we have hitherto had in the lower levels. We cannot yet say to what extent it will continue, but it looks well at present. We estimate to have raised this afternoon about 150 lbs. specimens that probably contain over 100 ounces of gold. The gold is very coarse in all parts of the solid stone, which contains large quantities of pyrites. Some portions of the pyrites showing very rich indeed. Will keep you advised by wire as it is developed.—(Signed) M. H. Matthews."

COROMANDEL.—Superintendent's report for fortnight ending August 25: Coromandel Shaft, 420 feet level north. Since last reported the lode in the level has pinched almost to nothing, but is now opening out again, being over a foot wide in present end and assaying 8 dwts. per ton, drivage for fortnight 24 feet, total 328 feet from shaft.—420 feet level south. Driven 16 feet 6 inches, total 166 feet. Lode 1 foot wide, worth 10 dwts. per ton.—320 feet level north. This end is now 480 feet 6 inches from shaft, the drivage since last reported being 15 feet 9 inches. Lode in present end 8 inches wide, with occasional small branches of quartz, which assay 4 dwts. per ton.—Prospect Shaft. The 500 feet crosscut west has been advanced 22 feet 9 inches and is now 86 feet 6 inches from shaft, nothing of value has been met with, nor is there any appreciable change in the ground.—500 feet level north. This has been driven a further 2 feet 6 inches, and communicated to the drift south from No. 1 winze. This rock drill has been started to drive south of shaft at this level, no drivage having been made in that direction since the 290. The lode at starting is 3 inches wide, and worth ½ ounce of gold per ton.—500 feet south of No. 2 winze. This has been driven 6 feet 6 inches, a communication having been effected between No. 1 winze and the shaft. This machine has been taken from No. 2 winze and placed to open this ground by driving north of No. 1.—440 feet cross cut east. Driven 17 feet 6 inches, total length 245 feet 6 inches. We expect to cut the eastern lode in about 50 feet further drivage. Trial shaft on No. 5 lode sunk 6 feet 6 inches. Work hindered by rain. Lode in bottom 2 feet 6 inches wide, assay value of quartz 4 dwts. per ton.

MOUNT ZEEHAN (Tas.).—Manager reports for week ended 7th August: Argent section, main engine shaft, No. 6 lode. 72 feet level north, south west branch, raised 14 tons medium seconds. 72 feet level south extended 8 feet, total 236 feet. Lode 6 inches wide. Raised 2 tons seconds. Have started No. 2 rise. Raised 16 tons low quality seconds. Lode 1 foot wide. Stope raised 43 tons medium seconds. Lode 1 foot 6 inches wide. 132 feet level south raised 30 tons low quality seconds. 132 feet level north stope raised 35 tons medium seconds. Lode 1 foot 6 inches to 2 feet wide. Crosscut west to No. 7 lode extended 12 feet 6 inches, total 130 feet. No change. Concentrator has been run 16 hours on customers' ore and crushed 56 tons, and 43 hours on our own ore and crushed 151 tons seconds for 15 tons 19 cwts. concentrates, containing about 12 tons of lead and 1066 ounces of silver.

SUTHERLAND REEF.—On 23rd August, the manager wrote: East drive. This has been advanced 24 feet, making a total of 112. The reef in this drive is very good. West drive has been advanced 19 feet, making 130 feet in all. The reef here is not so good, being somewhat broken up. The reef in the rise 150 feet level is very rich; the richest stuff I have yet seen in the mine is coming from here. The work done here has been 10 feet.—Main incline shaft: Two miners and two carpenters are still engaged in bringing down the guides for the skip.

TRANSVAAL GOLD.—Extracted from the general manager's advices, dated August 18: Generator and motor foundations. These will be finished by August 25, and the erections of these sheds will then be begun.—Kameel's mill. The shed over battery and stone-breaker was finished.—Kameel's cyanide works. The surveying and levelling was completed, and the excavations for foundation begun on August 13. Work at the mines was progressing satisfactorily.—Cyanide bullion. Experiments are being carried on with a view to improve the extraction by cyanide process. It is expected that the value of the cyanide bullion will be raised considerably, and if this be effected the elimination of the baser metals will cause a decrease in the weight of the smelted bullion from the cyanide process.

WILLOUGHBY'S MASHONALAND SYNDICATE.—We are informed that cable intelligence has been received from Buluwayo, stating that Mr. J. H. Hammond has given an excellent report of the Dunraven and Queen's reefs belonging to this syndicate. Mr. C. J. Clarke, M.E., who is Mr. Hammond's partner, has thoroughly investigated these two properties before Mr. Hammond's arrival, and the results of his sampling and assays have just come to hand:—Gwelo district—60 claims (3000 yards)—Second 10 feet of 20 feet reef in tunnel, 5 dwts.; 30 feet of open cut near surface, 5 dwts.; first 10 feet of 20 feet reef in tunnel, 18 dwts.; supposed rich ore boulder in cutting, 16 ounces. Queen's Bembesi district, 50 claims (2500 yards). Bottom west shaft No. 3, 50 feet; 4 feet reef, 2 ounces 4 dwts. Bottom east shaft No. 1 49 feet; 6 feet reef, 1 ounce 10 dwts. Mr. Clark considers that the Dunraven could supply a 40 stamp mill at once, and that within 12 months of starting milling very handsome returns would be made. He also considers that a 10 or 15-stamp mill should at once be sent to the Queen's, where excellent results could also be obtained within 12 months. The cost of mining and milling at the Dunraven is estimated at 4 dwts. per ton, and, as the Queen is situated on the flat, he estimated that milling and mining would cost about 8 dwts. per ton.

WENTWORTH EXTENSION.—Report dated August 11: Alluvial shaft. West drive 100 feet level advanced 10 feet. Rise will be made to the wash in coming week. West cross cut advanced 10 feet, total length 169 feet, in hard diorite.

A NEW 30 stamp mill is being erected at the Ginsberg Gold Mining Company's property.

PROVINCIAL SHARE MARKETS.

THE CORNISH MINE SHARE MARKET.

MR. SAMUEL JOHN DAVEY, Dealer in Cornish Mine Shares, Redruth, Cornwall, reports under date of September 20 (4 o'clock) as follows:—We have had a quiet market this week, without much change, and there is not much doing to-day. Following are quotations:—Blue Hills, ⅜ to ½; Carn Brea, 7 to 7⅛; Cook's Kitchen, ⅜ to ⅝; Dolcoath, 70½ to 71½; East Pool, 9 to 9⅛; Killifreth, 2⅞ to 3; South Condurrow, ⅝ to ¾; South Crofty, 1⅛ to 1⅛; South Wheal Frances, ⅞ to 1; Tincroft, 12 to 12⅛; West Frances, 1⅝ to 2; West Kitty, 6⅞ to 7⅛; Wheal Agar, 2⅛ to 2⅜; Wheal Basset, 1 to 1⅛; Wheal Grenville, 18⅛ to 18¾; Wheal Kitty (St. Agnes), ⅝ to ¾; Polberro, 1⅛ to 1⅛.

Mr. MICHAEL WILLIAMS BAWDEN, Mining and Assaying Offices, Liskeard, Cornwall, writes (September 20) as follows:—The mining market is firmer on the improvement of the tin standard, but prices have not responded to the advance from a want of confidence in its being permanent. Closing prices:—Blue Hills, 8s. 6d. to 10s.; Carn Brea, 7 to 7⅛; Cook's Kitchen, ⅜ to ½; Devon Consols, 1⅜ to 1½; Dolcoath, 70½ to 71; East Pool, 8⅛ to 8⅜; Killifreth, 2⅞ to 3; Levant, 6⅜ to 7; Phœnix United, ⅛ to ⅜; Polberro, 1⅛ to 1⅜, o.p.; South Crofty, 1⅛ to 1⅜; South Frances, 1 to 1⅛; South Condurrow, ⅝ to ¾; Tincroft, 12 to 12⅛; West Frances, 2 to 2⅛; West Kitty, 6⅞ to 7; Wheal Agar, 2 to 2⅛; Wheal Basset, 1⅛ to 1⅛; Wheal Friendly, 2s. to 3s.; Wheal Grenville, 18⅛ to 18⅜; Wheal Kitty, 15s. to 16s. 6d.

Messrs. ABBOTT AND WICKETT, Stock and Share Brokers, and Mining Share Dealers, Redruth, write under date of Thursday, September 20:—With the exception of a few transactions in Killifreths, Tincrofts, Carn Breas, and West and Wheal Kittys, the market has been a very slow one, and prices show but little variation. Quotations herewith (4 o'clock):—Blue Hills, ⅜ to ½; Carn Brea, 6⅞ to 7⅛; Cook's Kitchen, ⅜ to ⅝; Dolcoath, 70½ to 71⅛; East Pool, 8⅛ to 9; Killifreth, 2⅞ to 3; Polberro, 1⅛ to 1⅜; South Condurrow, ⅝ to ¾; South Crofty, 1⅛ to 1⅛; South Frances, ⅞ to 1; Tincroft, 11⅞ to 12⅛; West Frances, 1⅝ to 2; West Kitty, 6⅞ to 6⅞; Wheal Agar, 2 to 2⅛; Wheal Basset, 1 to 1⅛; Wheal Grenville, 18 to 18⅛; Wheal Kitty, ⅝ to ¾. Tin 73½.

MANCHESTER.

Messrs. JOSEPH R. and W. P. BAINES, Stock and Share Brokers, Queen's Chambers, 7, Market-street, write September 20, 1894 (noon): Railway markets are lower all round for the past week, and there is also some giving way on one or two others of the prominent sections of the market, such as Colonials. Miscellaneous classes, however, show fairly well again, herein there is some irregularity in quotation movements. As regards Rails only a moderate business has been in progress, and inasmuch as there have been some fluctuations, we will give the week a dreary form for these. Friday last found Home Rails generally easier, the heavy lines most especially, though in no case was there any severe fall. Americans began well, and there being only a small offering of stock quotations were were well maintained till just at the finish, when rather lower prices were marked. Canadians easier all round, Pacifics and Trunk issues alike being affected, Mexicans on the other hand were the turn harder. Saturday, as usual, found business slow, Home Rails held up, and Mexicans improved a little, but Americans and Canadians (Trunk issues at any rate) were lower, Monday.—Home rails were very little dealt in, but in common with rest of market prices tended easy. Americans were a very flat market, Readings, Denver Preference, and Union Pacifics being particularly weak, and others down, but not to same extent. Canadians easier also. Realising all round seems to have been going on, and prices suffered most where this influence was strongest. Tuesday brought in weakness in home rails, the exceptions to the general rule being Lancashire and Yorkshire specially, and Midlands, which were just the turn higher. Canadian Pacifics practically unchanged, but Trunks mended on their traffic being better than had been prognosticated. Americans rather lower again, but being fairly well taken at the lower figures the declines did not amount to a great deal in any case. Mexicans fell away rather in prices, though little or no business was marked here. The splendid increase of traffic announced on Lancashire and Yorkshire (£14,700 odd) is accountable for the renewed rise on this stock. The Trunk traffic was £15,500 odd down. Yesterday, Brighton A and Dover A were both fractionally better, but the rest of home rails are again, for the most part, a little easier. Canadians stronger, and somewhat in request at better figures. Americans, coming better from New York, found the improvement reflected here, and this improvement lasted well down to the finish. In common with other rails, Mexicans too, were on the firmer side, though no business was marked here. This morning Home rails open practically same as last night's close, the few alterations being in no case more than ⅛, and these changes are contradictory. Americans again count better, but prices are only fractionally above yesterday's finish. The little advance is very general, however, Denver preference alone being ⅛ lower. Canadians participate in the small rise also. Consols are marked ⅛ down on the week. Colonials, too, are lower where altered, but the declines are not numerous. They are as follows, viz.: Queensland Inscribed 1, and New South Wales Inscribed, ditto Consolidated and New Zealand Inscribed ⅛ each. Home Corporation stocks with few dealings reported show the following changes only. Higher: Leeds Four per Cent. ⅛. Lower: Bradford Four per Cent. ⅛. Foreigners are better in the majority of instances of variation. Higher: Mexican Six per Cent. 1 to 1⅛, Spanish Four per Cent. 1⅛, Brazilian Four and Half per Cent. 1, Portuguese ⅛, Italian Rentes ⅛, and Turks 1891 ⅛. Lower: Argentine Six per Cent. 1⅛, Uruguay Three and Half per Cent. ⅜, and Brazilian Four per Cent. ⅛. Business in the miscellaneous markets has been sluggish, and reaches but a poor total altogether.

BANKS.—Locals better where changed. Business small, save for some repetition of markings in Unions.—Higher: London and Midland ⅛, Lancashire and Yorkshire ⅛ to ⅜, Bank of Liverpool ⅛, Imperial of Persia ⅛, and District ⅛.—Lower: Imperial Ottoman ⅛.

INSURANCE.—Palatines have been done repeatedly at full recent figures, and Equitables a few times. Beyond these dealings, hardly anything doing.—Higher: Royal ⅜ to 1⅛, British and Foreign Marine ⅛ to ⅜, Commercial Union ⅜ to ⅝, Thames and Mersey Marine 5-16, London and Liverpool and Globe ⅛, and Manchester Fire, Maritime and Union Marine ⅛ each.—Lower: Boiler Insurance and Steam Power ⅛, Globe Accident 1-16 to ⅛, and Equitable Fire, &c., 6d. to 1s.

COAL, IRON, &C.—A little business in Bolckows and Ebbws is all done here. These are not quotably altered, save Bolckows fully paid down ⅛, but otherwise changes where marked are on the favourable side.

MINES.—Consolidated Gold Fields are 1-16 lower, but the rest of the alterations are to better prices, copper concerns being prominent in the advances.

COTTON SPINNING shares, whilst still dull, show more disposition for business, which contrasts favourably with the stagnation prevalent for a long time back.

TELEGRAPHS.—Anglo Preferences are 2, ditto Deferred ⅛, and Direct United States ⅛ down. Western and Brazil ⅛ up.

BREWERIES.—Hardy's are ⅛ lower, but the rest of the changes are in holders' favour. Taylor's Preference and Parker's (Burslem) being prominently better. Allsopp's on balance, after being still better, show 1⅛ up on the week.

MISCELLANEOUS.—Gas Stocks better where changed. Rochdale Canal 3, and Suez Canal ⅛ up. Lister's are better, but Coat's and Chadwick's Ordinary Shares are both lower. Ship Canals moderate business, and no quotable change in current prices compared with a week ago.

LATER (4 p.m.).—A dull day in every respect. Lancashire and Yorkshire, amongst home rails, are the turn lower again (⅛). Ameri-

cans are just on the higher side for choice, and Canadians about a similar amount the other way. Mexicans unchanged.

SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, Stockbroker and Ironbroker (September 20), writes:—During the past week there has not been business doing, and prices are generally higher. Trade reports are encouraging, metal markets improving, and money remains cheap, so that prospects are favourable.

In shares of coal, iron, and steel companies, prices do not show much alteration. Bolckow Vaughan are at 13, Ebbw Vale 9, Marbella 65s. (touched 70s.), Niddrie 41s., Rhymney 33s. 6d., Steel Company of Scotland 56s. 6d., Teeside Iron Preference 8s. 9d., Wilson's and Clyde 11½.

In shares of copper concerns a considerable amount of business has been done. Tharsis touched 106s. 3d., and Tinto 16 9-16, but are now easier. Arizona are at 10s. 6d., Cape 32s. 6d., and Copiapo 42s. 6d.

In shares of gold and silver mines a fair amount of business has been done. Montana improved from 14s. 9d. to 16s. 1½d., and are now 15s. 3d. The following dividends have been announced:—African Gold Recovery, 10 per cent.; Bayley's Reward, 4d. per share on September 29; and Sheba, 1s. on October 8. The Frontino profit for July has been £1618. Both Day Dawn Block and the Mysore Companies announce improvements in their mines, and the former shares have advanced. Victoria and Altamira First Preference shares offered. Nouveau Monde wanted. American Belle are at 2s. 3d.; British South Africa (Chartered), 37s. 6d.; Barrett's, 3s. 3d.; Broken Hill Proprietary, 60s. 6d.; Black Reef, 4s. 6d.; Blue Spur, 2s.; Consolidated Gold Fields of South Africa, 48s; Cassel, 14s. 6d to 15s.; Champion Reef, 75s.; Golconda, 21s.; Golden Gate (Cal.), 5s.; Idaho, 2s. 3d.; Kaboonga, 1s.; Klerksdorp Estates, 1s. 6d. to 2s.; Mexican Gold and Silver Recovery, 6s.; Nigel, 75s.; Nundydroog, 34s.; Pigg's Peak, 3s. 6d.; Sheba Lode Exploration, 7s. 6d. to 10s.; St. John del Rey, 30s.; True Blue Block, 2s. 9d.; United Langlaagte, 10s. to 12s. 6d.; Victoria and Queen C.T., 4s. 6d. to 5s. 6d.; and West Australian Gold Fields, 45s. to 46s. 3d.

In shares of Miscellaneous companies there has not been much business doing. In oil companies the only quotation is Young's Paraffin at 20s. 3d.; Nobel's Explosives are at 14 5-16, and Roburite Explosives 27s. 6d. to 32s. 6d.

EDINBURGH.

Messrs. THOMAS MILLER and SONS, Stock and Share Brokers, 69, Hanover-street, Edinburgh, report as follows under date of Septem 20.—In Scottish railway stocks, Great North has advanced 1, Highland ⅜, Caledonia Deferred has receded ⅜, North British ¼. Guaranteed and preference stocks have generally maintained their prices, and in some cases have advanced. Banks have been quiet. National have risen from 339 to 340. Insurance shares have improved. Commercial Union advanced from 33 to 33⅜. Liverpool, London, and Globe from 48¼ to 48 7-16, North British and Mercantile from 39 3-16 to 40¼, Northern from 66½ to 67½, Thames and Mersey from 11 5-16 to 11½. Alliance have declined from 10 7-16 to 10¼, Standard Life from 61⅜ to 61½. London Scottish American Trust Deferred stock has risen from 51 to 56. Copper shares have been good. Arizonas have risen from 9s. to 10s. 3d., Rio Tinto from 15¼ to 16, Tharsis from 4⅜ to 5¼. Distillers 3s. 9d. higher at 16. Coats 2s. 6d. lower at 17⅜. Union Steamship of New Zealand 2s. 6d. higher at 7½. The following are the latest prices of deposits of Reconstructed Australian Banks:—Australian Joint Stock, 16s. 3d. per £; Bank of Victoria, 15s. 3d.; City of Melbourne, 14s.; Commercial Bank of Australia, 13s. 3d.; London Bank of Australia, 16s. 9d.; National Bank of Australia, 17s. 3d.; Queensland National 14s. 6d. per £.

BRITISH GUIANA GOLD INDUSTRY.—The amount of gold entered at the Custom House, Georgetown, Demerara, on the 23rd ult., for shipment by the R.M.S. *Dee* which sailed on the 23rd ult., was 4698 ounces 13 dwts. 13 grains to the value of $83,683·28 an increase in the previous shipment of 5043 ounces 12 dwts. 9 grains to the value of $90,022. With this addition the total output for the year amounts to 72,713 ounces 1 dwt. 21 grains to the value of $1,280,038·91. The following is the return of gold entered at the office of the Department of Mines, for the week ending 18th August, 1894, and the amounts of royalty paid thereon:—

	Amounts. Ozs.	dwts.	grs.		Royalty. $	c.
Barima	872	5	20	....	785	07
Barama	30	17	5	....	27	78
Cuyuni	191	10	11	....	172	37
Groete Creek	—	6	10	....	—	29
Puruni	15	8	8	....	13	87
Mazaruni	213	0	9	....	191	72
Conawarook	348	4	20	....	313	42
Potaro	167	4	8	....	150	49
Total	1838	17	19	....	1655	01

UTILISING THE NIAGARA FALLS.—The London correspondent of the *Glasgow Herald* writes: In the course of the next three or four weeks the machinery for the recovery of the wasted power of Niagara Falls will be set in motion, and many engineers await with great interest the demonstration of the solutions of various important problems by Lord Kelvin and the other scientists engaged. The power to be developed at the commencement is 20,000 horse-power, and this is to be transmitted to the city of Buffalo, where it will be capable of running one-half of all the machinery in the town, including mills and street cars. The point of importance is the loss in transmission over such a distance, and this of course affects the economy. Should the successful results anticipated be realised extensions will at once be entered upon, and instead of only three turbines being worked by the rush of waters down the tunnels cut in the rock, 10 turbines will be placed in the water. Thus 10 immense dynamos will be worked, so that 100,000 horse-power will be developed, half of which will be utilised in the factories along the shores of the lake at Niagara, and the other half transmitted to distant cities, and for working the barges on the canals in New York State. Little doubt is entertained as to the success of the scheme, and the subsequent alterations will be easily made, since all that is required is the addition of the turbines and electricity-generating machines. Double assurance of the success of electric distribution over great distances is, indeed, found in the report of a Royal Commission appointed in in Sweden to consider the utilisation of a great fall there, a copy of which has just been sent me. The power available is equal to 49,000 horse-power, and it is proposed to divert part of the water into a storage reservoir to be cut in the rock, and from thence to pass the water down a tunnel 770 feet long, with a fall of 51 feet, in which a series of 10 turbines would work, producing 10,000 horse-power, the voltage being 15,000, with alternate current generators. The power is to be transmitted to Stallbacka or Gothenburg, and could there be retailed at £3 9s. per horse-power per annum. This is about half the cost of steam-power under favourable conditions, and in Gothenburg alone the steam-power now used is equal to 6500 horse-power. The cost for providing 5000 horse-power at Gothenburg from Upper Gullo Cataract, with two receiving stations, is put at £86,000, and it is anticipated that the annual charge would be £8800, the profit being 7·8 per cent.; while for £10,000 the first cost would be £147,000, annual cost £15,500, and the profit 10·55 per cent. It is expected that the Swedish Crown authorities will at once enter upon the scheme.

A TELEGRAM from Cape Town, dated 19th September, says that most favourable reports on the testing of the reefs in Mashonaland properties continue to arrive.

WANTED.

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NOTICE IS HEREBY GIVEN that the SPECIAL RESOLUTION submitted to the Shareholders at the EXTRAORDINARY GENERAL MEETING, held at the Cannon Street Hotel, London, on the 7th day of May, 1894, and duly confirmed at the EXTRAORDINARY GENERAL MEETING, held at the offices of the company, on the 22nd day of May, 1894, was sanctioned by the Court of Chancery, on the 19th day of September, 1894. Under the said SPECIAL RESOLUTION every member of the company, or holder of share warrants to bearer, is entitled to claim, as returned capital, a cash payment of £1 per share in respect of every share in the company held by him or her.

Claims for the repayment of the said capital may be presented at the address at foot on and after Monday, the 1st October, 1894, and must be listed on the official forms (registered shares on Form C., and share warrants to bearer on Form D.) which can now be obtained at the company's office. Claims must be presented on a MONDAY, WEDNESDAY, or FRIDAY, between 11 a.m. and 2 p.m., and must be accompanied either with the share certificates or the share warrants, for the purpose of examination and endorsement. A receipt, signed by the Secretary, will be given in exchange for share warrants deposited with claims.

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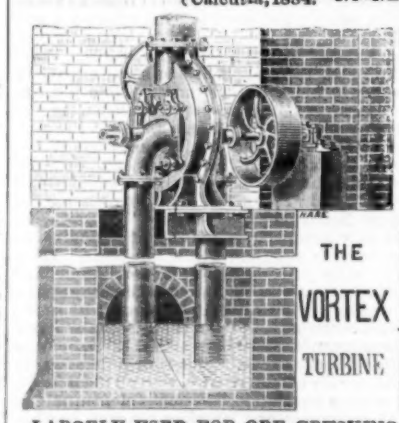

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CORRELATIONS IN THE COAL ROCKS
WEST OF POCHANTAS, FLAT TOP, VIRGINIA.*

By C. R. BOYD, Wytheville, Va.

IN 1874 I received an appointment in the corps organised by Col. William P. Craighill, U. S. Engineers, to survey the New or Upper Kanawha River for the purpose of ascertaining the practicability and cost of the improvement of that stream by the Government for purposes of navigation.

Being placed in charge of the slack-water party, under the immediate supervision of civil assistant N. H. Hutton, C.E., I had peculiar facilities and advantages for the study of all rock formations presented to view in that river and some of its tributaries, such as Greenbrier and Bluestone Rivers.

Previously, in 1872, I had been called upon by Col. Craighill to make a report upon the ores and coals of Upper New River, in Virginia; and it was one of my chief duties in these surveys to note carefully the position and character of all rock-formations, with a view to their possible use, either as natural firm foundations for dams and locks, or as building materials for construction.

In this way I really began my studies of the correlations of the West Virginia, Virginia, and Kentucky coal series; and I believe I began at the right end of it, where the whole series is cut in one long canon. At that time it was a study rather of physical and structural features; since then the fauna and flora, as well as the economic relations of the coal-seams in those massive stratifications, have been, from time to time, the objects of earnest study over this field, 200 miles in length by about 60 miles in width.

It was in 1872 that I first visited the Flat Top Coal Field, and found in the entire series there 46 feet of coal; and in 1874 I saw, for the first time, the Quinnimont series at or near Nuttallsburg, on New River, dipping north-west, and bringing in, lower down the river, the massive ledges of conglomerate on top of these coals.

During Mr. Lathrop's administration of the Pocahontas Mine I found a confirmation of my report made to Colonel Craighill in 1872, of the quantity of coal in that series. But it was not until October 31, 1885, that I became fully convinced of the identity of the Flat Top and Quinnimont coals.

In the distance across from the river to Pocahontas the conglomerate pebbles had changed from larger to smaller size. In later years I have been able to study all these changes and correlations throughout the great coal field comprised in West Virginia, Virginia, Kentucky, and eastern Tennessee, particularly through McDowell county, West Virginia; Buchanan, Tazewell, Russell, Dickenson, Wise, Scott, and Lee counties, Virginia; Bell, Harlan, and Pike counties, Kentucky; and Claiborne county, Tennessee.

As is now well known, the conglomerate I have mentioned as overlying the Flat Top coal series comes down below the tops of the hills as we proceed west from Flat Top, both on Tug and Dry forks of Sandy River, in McDowell county, West Virginia. It then passes through the divide, with very little change of level, westwardly and south-west, between the Dry and Louisa forks of Sandy River, several hundred feet below the tops of the highest ridges, and shows itself high up on the sides of the hills on Dismal Creek and its affluent Hurricane fork. The same ledges, traced through with care, may be certainly recognised on the Clinch Valley slope of Sandy ridge, throwing the coal seams mined at Richlands, Big Creek, Town Hill, and Coal Creek into the New River Flat Top series.

The same conglomerate, coming west from Dismal Creek with greater or less undulations, appears on the head streams of the main fork of the Louisa River, in Buchanan county, passing on westward through the ridges bounding the Garden fork of Louisa River, and through the divide between the waters of the Louisa and Russell's forks of Sandy River, and comes out again fairly to view at Hurt's, on that stream, several hundred feet below the tops of the hills. (With reference to particular hills and streams, exact elevations are taken.)

These identical ledges of conglomerate then pass west and south-west, without interruption, behing or northward of the Big Ax up-throw, towards the waters of Frying Pan Creek and the headwaters of Dumps Creek (the latter an affluent of Clinch River), and litter nearly all those streams with pebbles.

On Dumps Creek this conglomerate is nearer the crests of the hills, and begins to inspire the hope that the full thousand feet of the Pocahontas flat top series will be seen, so that the famous No. 3 seam will again emerge in full view; but the bottoms of these streams stop us fully 150 feet above the level at which we may reasonably expect to find Pocahontas No. 3. On this stream the conglomerate is fully 40 feet thick, with about 30 feet of thin-bedded alternate limestones and shales above it, the limestones showing *Chonetes variolata* and *ornata*, *Streptorynchus umbraculum*, and *Productus longispinus*.

Passing then westwardly along Sandy ridge to the head waters of Lick Creek, Russell Creek, and Tom's Creek, tributaries of Clinch River, we find that Professor J. P. Lesley's Sheep Rock conglomerate is our identical friend that we have followed assiduously for so many miles from the New River and Pocahontas.

The declaration of Professor Lesley that this great conglomerate plate overlies all the coals of this region was either made to the writer when he saw Professor Lesley at his house in 1881, or was contained in a memoir then handed him. My observations there seems to be confirmed by distinguished authority.

On the crests of the hills of Tom's Creek, near Coeburn and overlooking the Clinch Valley branch of the Norfolk and Western Railway, we might leave this conglomerate for the present reposing above the Big Tom Creek series, holding the so-called Imboden seam and others, such as the Jawbone, the Kennedy, and the two Banner seams; but we feel constrained to add a few more words. From Tom's Creek westward through Tacoma, about 8 miles by air line to Norton, there is a territory in which further and very close identification is quite necessary to prove that the so-called Imboden seam of Tom's Creek is the real Imboden seam of Norton and the "Pocket," nearer Big Stone Gap. I doubt it. There is, indeed, some probability that the Big Tom's Creek coals and rocks sink, and, carrying the overlying conglomerate with them, west of Tacoma, possibly pass entirely beneath the Norton and "Pocket" series, rising again quite abruptly to the south of Norton and the "Pocket." Witness the dip of the rocks as we go westward from the top of Sandy ridge, overlooking Tacoma on one side and Gladville on the other. These rocks soon begin to dip as we go toward Norton from there, and descend at the rate of 300 feet per mile. This explanation may appear to conflict with some views already expressed, I believe, with reference to the northeastward continuation of the Stone Mountain axis, as we proceed from the south northeastward across Gess River, between Tacoma and the mouth of Tom's Creek. But those differences of opinion which now exist, or may hereafter arise, with all the interesting questions involved in these correlation, it seems to me, can only be solved satisfactorily by systematic and laborious research, particularly along faulted and eroded lines, together with a thorough study of the lithology and palæontology of each individual member of this entire series of rocks.

In closing it may be pertinent to remark that on Bennett's fork of yellow creek, three miles westward from Middlesborough, Kentucky, near the level of that creek, these sub-conglomerate coals are probably now being mined, from which seams we can readily trace the well-known series up through the middle to the upper coal measures, almost to the crest of the highest coal rocks below the Permian.

* A paper contributed to the Virginia Beach meeting of the American Institute of Mining Engineers.

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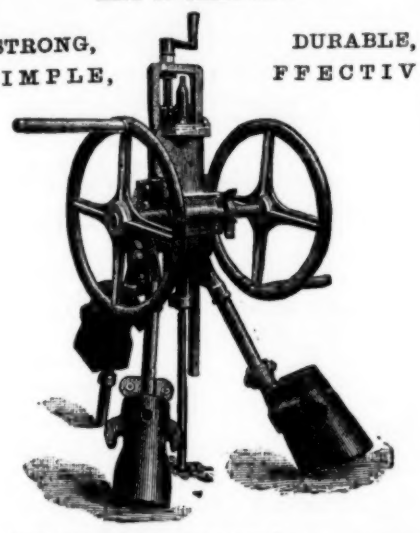

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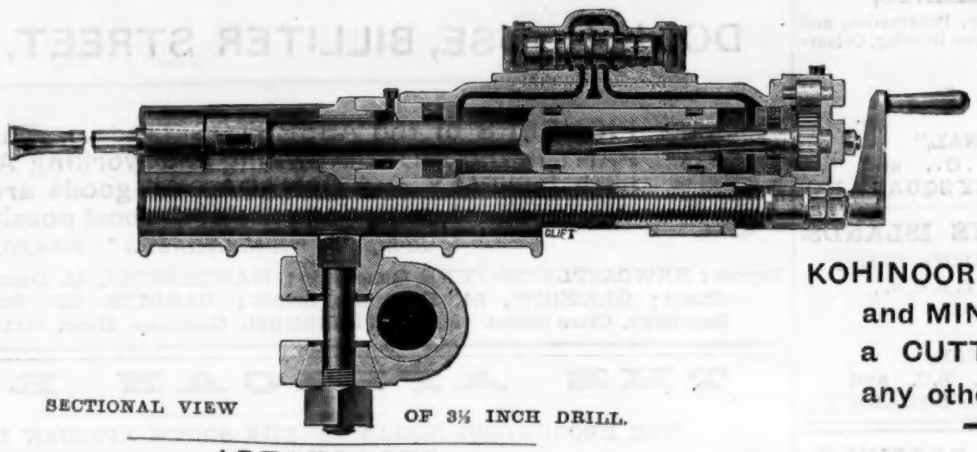

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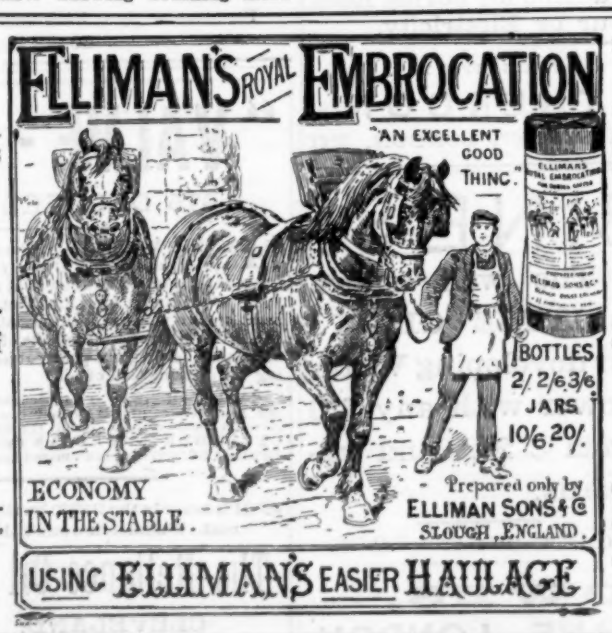

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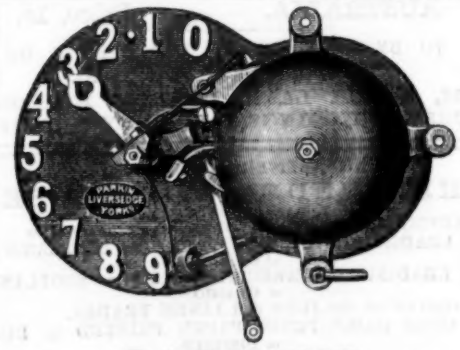

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